

FOR
RICHER
FIELDS

Croplife

PUBLISHED
EVERY
MONDAY

WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

2

Subscription Rates:
\$5 for 1 year, \$9 for 2 years

APRIL 25, 1955

Acceptance under Section 34.04,
P. L. and R. authorized.

No. 18

FDA Amends Pesticide Tolerance Regulation

WASHINGTON — To eliminate duplication of fees charged to applicants for tolerance determinations on pesticides, Food and Drug Administration has amended its regulations regarding such charges.

According to FDA officials, after reviewing their original orders in connection, it was found that in many instances where application was made for a tolerance allowance for a particular product that such conditions applied to more than one crop, which the product might be used effectively.

However, under the original regulation the applicant would be required to come in for approval for the use of the pesticide and a tolerance authorization for each crop where it was recommended for use. At the same time, although the supporting data for the tolerance was similar in each instance, the applicant would be required to pay duplicate or triplicate fees.

In amending the regulations regarding payment of fees for hearings on applications for tolerance level approval, FDA has now ruled that where supporting data for a product is similar for use applications in several crops, the original fee is all that is necessary and the basic data can be used over several applications where one product use is involved for different crops.

Inside You'll Find

Insect Notes	4
Over the Counter	9
Bug of the Week	12
What's New	14
World Report	18
Editorials	22
Index of Advertisers	23
Meeting Memos	24

Plans Set for Anhydrous Plant In Puerto Rico

NEW YORK—Financing plans have been completed for the construction of a \$12,250,000 anhydrous ammonia plant and other integrated facilities in Puerto Rico, Luis R. Gonzalez, president of Gonzalez Chemical Industries, Inc., of San Juan, Puerto Rico, announced April 26. In terms of investments, the project will be the second largest new industry in Puerto Rico.

The plant site for the new industry will have deep-water facilities.
(Continued on page 17)

Bids Asked for Cotton Pesticides For Belgian Congo

WASHINGTON—Bids have been invited by Cogenco, the managing committee for the cotton reserve fund in the Belgian Congo, for the supply of 2,593.5 tons of insecticides for use in the cotton areas of that country.

The requirement is divided into four lots, each containing 5% DDT, 10% toxaphene and 40% sulphur. The bids must be in by May 9 and deliveries must reach the final destination by Dec. 15.

Survey Entomologists Schedule Meeting

SACRAMENTO—Chairman H. M. Armitage has called a meeting of his Insect Pest Survey Committee of the Entomological Society of America in conjunction with a meeting of Regional Federal Survey Entomologists at Washington, D.C., May 10-12. Participants will discuss state insect pest survey programs and their relation to the national program in an effort to work out cooperative action where needed.

Pesticide Output, Exports Up In 1954; USDA Survey Shows Farm Pest Control Activities

— FARM USE —

WASHINGTON — Farmers pay about \$241 million yearly for pest control chemicals and for custom pest control services on crops and ranges, according to a recent survey conducted with the help of 23,500 farmer correspondents by the U.S. Department of Agriculture.

The total includes \$193 million for insects and diseases and \$48 million for weeds. It does not cover cost and upkeep of farmer-owned sprayers or dusters, charges for the farmers' own labor, cultural control measures, seed treatment, control of rodents and insects in farm-stored grain, soil fumigation for nematodes or insecticides mixed with fertilizer.

Results of the survey are reported in the current issue of "Agricultural Research," published by the Agricultural Research Service, USDA. It is pointed out that farmers spend this amount to fight weeds, insects and disease on only one sixth of the cropland.

This bill for pest control doesn't seem large "when compared with the estimated \$7.5 billion pest loss that still occurs there and on the five sixths of the cropland," comments the publication.

Farmers treated about as many acres for weed control—31 million acres—as they did for control of both
(Continued on page 17)

— PRODUCTION —

WASHINGTON—Considerably increased production and marketing of pesticides for 1954 as compared with the previous year, are reported by the Business and Defense Services Administration, U.S. Department of Commerce, in its monthly industry report, "Chemical and Rubber."

The report states that output of benzene hexachloride (on a 100% gamma basis) was up approximately 5% over that in 1953, and production of DDT was 8% higher. In the field of weed killers, 2,4-D acid rose 10%, but 1954 manufacture of 2,4,5-T acid was down 48% compared with the previous year.

Copper sulfate production dropped 10% in 1954. Production of miscellaneous organic pesticides—allethrin, aldrin, aramite, dieldrin, chlordane, parathion, toxaphene and many others made by three or less producers each—is estimated at 65,000,000 lb. in 1954 against 50,000,000 lb. in 1953. This rise in—
(Continued on page 20)

Defeat in House Seen for High Farm Support Bill

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON—The high price support bill approved by the House Agriculture Committee and scheduled for floor consideration May 3 is seen headed for the trash can, according to reliable congressional leaders.

Certain defeat awaits the bill in the House according to one observer, who reports that the cotton bloc wants no more of high price supports and will desert the rigid high support bloc when the bill reaches the House floor.

This congressional leader, who last year accurately forecast the passage of the flexible support bill, says that southern farm leaders now are convinced that attempts to maintain an artificially high support level for that commodity would result in pricing cotton out of world markets, and cause losses in the domestic market from competition with synthetic fibers.

Recently Sen. James O. Eastland (D., Miss.) expressed favor for a 65% of parity support for cotton with some increase in acreage for the next crop. That idea immediately won favor from Ezra Taft Benson, secretary of agriculture.

It is now seen that a defeat of the bill, which would repeal the flexible price support provisions of the Farm Act for basic commodities and
(Continued on page 17)

Potash Deliveries for 1954 Up 9%, American Potash Institute Reports

WASHINGTON—Potash deliveries in the continental U.S. in 1954 as reported by the American Potash Institute, moved into new high ground with a delivery of 1,834,810 tons—K₂O content, running ahead of 1953 by 171,568 tons. However, imports of potash for agricultural uses amounted to 107,036.30 tons which tends to reduce the net gain of domestic producers.

USDA officials, commenting on the institute's report, indicated that the increased use of potash probably resulted from the decline in acreage allotments for basic commodities in the past year.

With more acreage cutbacks in view, Washington observers were unable to estimate if these further re-

ductions in acreage might indicate another year of increase, being unable to fix a level of diminishing returns where additional use of potash would fail to produce greater farm profits.

The qualifying effect of imports on the increase in total agricultural use may be of significance to domestic producers who had requested the Federal Government to check imports from middle Europe this year. The Tariff Commission which had this proposal under study rejected the domestic producers' request which had asked that imports should be checked on the grounds that such imports were being sold in violation of the provisions of the anti-dumping law.

The American Potash Institute's

report states that deliveries of potash in North America during 1954 amounted to 3,522,213 tons of salts containing an equivalent of 2,059,643 tons K₂O, again setting a new record high. This was an increase of 178,259 tons K₂O or 9% over 1953. Deliveries by the seven leading domestic producers were 1,909,255 tons K₂O, an increase of 11% over 1953. Imports were 150,388 tons K₂O, a 5% decrease under 1953.

Deliveries for agricultural purposes in the continental U.S. for 1954 were 1,834,810 tons K₂O, an increase of 171,568 tons over 1953. Canada received 76,265 tons K₂O, Cuba 5,113 tons, Puerto Rico 21,017 tons, and Hawaii 18,252 tons. Exports to other
(Continued on page 20)

INSECT, PLANT DISEASE NOTES

See Page 4

Shea Chemical Moves Executive Offices To Jeffersonville, Ind.

BALTIMORE — Executive offices of the Shea Chemical Corp., which have been located in Baltimore since mid-1952, are being moved to Jeffersonville, Ind., where the corporation recently built permanent office quarters.

The first phase of the moving was completed in time for resumption of normal activities in the midwestern location April 25. The balance of the operation, which involves primarily the accounting and business divisions, is expected to be completely moved in approximately three weeks.

Simultaneously with the movement to Jeffersonville, Ind., is the opening of a New York office at 114 E. 40th St., New York 16, and the establishment of an Organic Phosphates Division at Adams, Mass., the corporation announced.

The purpose of the move is to bring the corporation's main offices closer to the center of its operations, a spokesman said. In 1953, the corporation established its phosphorus production facilities in Columbia, Tenn., and last fall,

constructed a sodium phosphate plant and office building at the Jeffersonville, Ind., location. Recently, the corporation announced a two-year expansion program to consist of doubling its phosphorus production facilities in Columbia, Tenn., and constructing a second sodium phosphate plant in Dallas.

The corporation's only eastern plant is at Adams, Mass., where it produces dicalcium phosphate and phosphoric acids. This location is also to be the site of its organic phosphate operations.

In addition to producing phosphorus, Shea produces calcium phosphates for the feed industry, phosphoric acids for industrial uses and fertilizer manufacturing, and sodium phosphates primarily for the detergent and cleanser industries.

Named MCA Counsel

WASHINGTON—Claude E. Hobbs, Jr., has joined the Manufacturing Chemists Assn. as staff counsel, it has been announced here by William C. Foster, president. For the past four years prior to his new appointment, Mr. Hobbs served as assistant parliamentarian of the U.S. House of Representatives.

Washington Adopts Crop Lien Law for Dusting, Spraying Debts

OLYMPIA, WASH.—A law passed by the 1955 Washington Legislature and effective June 10 provides for liens against crops to satisfy debts in connection with crop dusting or spraying.

Chapter 217, Session Laws of 1955, provides that persons who have contracted to perform labor or services or furnish materials in crop dusting or spraying of crops or lands may claim a lien on such crops by filing within 30 days after harvest of the crops sprayed or dusted.

The filing is done with the county auditor. An action to foreclose such lien must be made within eight months after filing the claim, the law states.

Soil Improvement Committee Moves

CHICAGO—The Middle West Soil Improvement Committee has moved from 121 W. Wacker Drive to Room 1114, 228 N. La Salle St., Chicago 1. The telephone number is State 2-9361.

Hourly Earnings of Fertilizer Workers Show Gain in 1954

WASHINGTON — Average hourly earnings for fertilizer industry workers during 1954 ranged from \$1.10 in March to \$1.51 in September, according to a report by the Bureau of Labor Statistics, U.S. Department of Commerce.

The average weekly hours during the year ranged from 41.5 in January to 44.2 in April. The average hourly earnings in 1954 represent an increase of 8% over the average of \$1.40 in 1953. Average earnings and weekly hours are shown in the following table.

	Average Hourly Earnings	Average Weekly Hours
1947	.....\$ .95	42.4
1948	..... 1.02	41.5
1949	..... 1.08	41.6
1950	..... 1.14	41.3
1951	..... 1.24	42.2
1952	..... 1.32	42.6
1953	..... 1.40	42.4
1954	..... 1.40-1.51	41.5-44.2

Regulation Controlling Spraying Near Ornamentals Repealed

SACRAMENTO — A subsection of the California Administrative Code which regulated the spraying of injurious herbicides near susceptible ornamental plantings, has been repealed.

The action was taken after hearings at which crop raisers contended that the rule seriously inhibited proper weed control.

The repealed ruling was Subsection (b) of Section 2453, Title 3, California Administrative Code. It read as follows:

"(b) No injurious herbicide shall be applied within one-half mile of a susceptible crop or ornamental planting belonging to any person other than the owner of the crop being treated unless there is a continuous air flow away from such susceptible crop or planting during application."

Section 2453 as amended now reads:

"2453. In addition to the regulation set forth in Section 2450, the following provisions apply to the use of injurious herbicides in the Sacramento and San Joaquin Valleys outside the hazardous areas during the period from March 15 to Oct. 15 of each calendar year:

"(a) A smoke column or other satisfactory device shall be employed to indicate to the operator of the equipment the direction and velocity of the air flow at the time and place of treatment.

"(b) (Repealed).

"(c) No injurious herbicide shall be discharged more than ten feet above the ground. Discharge shall be shut off whenever it is necessary to raise the equipment over obstacles such as trees or poles.

"(d) Nozzles shall conform to specifications approved by the State Department of Agriculture as to design, arrangement, and operating conditions for the purpose of minimizing drift.

"(e) No injurious herbicide shall be applied by aircraft when the temperature five feet above the ground exceeds 80° F., except that operation may continue six hours after sunrise regardless of temperature."

FARM CAPITAL

WASHINGTON — Behind each of the 8½ million farm operators, hired hands and family workers on U.S. farms, there lies an average capital investment of about \$14,000, according to agricultural economists.

Specify GEIGY METHOXYCHLOR

for Aerosol and Spray Formulations

METHOXYCHLOR is a safe, economical, chemical relative of DDT. Its low toxicity to man and animals, combined with its long residual toxicity to insects, makes it an ideal insecticide for use in aerosol formulations. Methoxychlor is compatible with pyrethrins, allethrin, and piperonyl butoxide. Geigy Methoxychlor "20" is designed for use in

the preparation of household sprays, dairy barn sprays, aerosols and other products where small amounts of Methoxychlor are desired in the finished products. Geigy Methoxychlor "90" is a concentrated Methoxychlor product for use in the formulation of Methoxychlor sprays and aerosol solutions.



GEIGY

Agricultural Chemicals

Division of Geigy Chemical Corporation, 89 Barclay Street, New York 8, N.Y. Branches at Des Moines, Ia., Fresno, Calif. and Leland, Miss. Contact the Des Moines branch for all your requirements on concentrates, technical DDT and BHC.

Originators of



DDT Insecticides

Wind, Lack of Rain Under Dryland Grains in California

SACRAMENTO—Inadequate rain and drying winds over all of California during March adversely affected prospective yields of dryland grains. Irrigated crops are developing satisfactorily although growers are waiting heavily for this time of year.

The California Crop and Livestock Marketing Service says that farming operations, retarded during the early winter by rains and wet ground, made little progress during the past two months and field work generally is ahead of normal schedules for this time of year. The prolonged period of recent dry weather has permitted growers to get their fields ready for planting of summer crops.

Planting of grains was mostly completed by the middle of March and seeding of sugar beets was well along by mid-April. Growers were generally ready to start to plant such spring crops as cotton, corn, beans and grain sorghums.

Indicated production of wheat in California is 7,344,000 bu. April 1. This production is realized at harvest, it will be the smallest in this state since 1924, and only five years record had crops of wheat which were smaller. The small crop this year is due primarily to reduced plantings under the government acreage allotment program.

The April 1 forecast of California wheat production of 57,502,000 bu., realized at harvest, was exceeded in 1954 and 1950. It is 18% less than the record 69,898,000 bushels produced a year ago.

California oats production is forecast at 5,280,000 bu., 25% less than the record high of 7,056,000 bu. produced in 1954. Soil moisture conditions were unfavorable for oats in March.

Flaxseed production was forecast at 1,624,000 bu. as compared with 1,89,000 bu. last year. The larger production this year results from an increase in the area planted.

Corn Planting Starts in Mid-South

MEMPHIS—"If the corn crib is full, everything is O.K." This is one of the old sayings long established in the South. Corn is one of the oldest crops in the South and is still a popular feed crop.

Corn production continues to carry a lot of enthusiasm and Mid-South farmers still have a feeling of security if they have a crib full of corn. Many Mid-South states, including Mississippi, which has been low on corn production in recent years, are in the middle of planting on delta and bottom land and on land following spring crops.

Farmers have found out they can produce 50 to 60 bu. corn per acre at a cost they can afford to pay. They are taking advantage of this economical crop, with help from county agents.

Fertilizer recommendations in the Mid-South call for 500 lb. of a high grade mixed fertilizer under the corn and a sidedressing of 60 to 70 lb. of nitrogen when corn is knee high.

KHAPRA BEETLE MEETINGS
SACRAMENTO—A. P. Messenger, chief of the bureau of Plant Quarantine, and Bob Harper, assistant chief, Bureau of Entomology of the California Department of Agriculture, were principal speakers at a series of meetings arranged by the California Hay, Grain and Feed Dealers' Association to hear latest reports on the khapra beetle.



"Sorry to get you out of bed, but I saw your sign asking us to order our fertilizer early." Reprinted by permission from the Southern Planter.

Water Outlook in West Called Poor

WASHINGTON—Streamflow from snow melt will be less than average in the major river systems of the western states during the 1955 irrigation season, the U.S. Department of Agriculture has reported.

The Soil Conservation Service's annual spring forecast, based on snow surveys made on 1,200 courses in the high mountains of the west, showed that normal runoff is expected in the extreme north and northwest, with a gradual decline in water supply outlook toward the south.

For the last five years the Columbia Basin on the north and northwest has had above normal snow cover and streamflow, while that to the south and southeast of the basin has been below normal.

Reservoir storage in the southern portions of the west has continued to decline, pumping of underground supplies increased, and in some areas crop acreage has been reduced and municipal supplies rationed. The forecast said that streamflow in much of this area is as low and the general water supply outlook is as poor as at any time in the past 50 years.

North Central APS Plans Summer Meeting

WOOSTER, OHIO—The summer meeting of the North Central Division of the American Phytopathological Society will be held at Wooster, Ohio, Aug. 8-10. Registration will be at 10 a.m., followed by an inspection of exhibits, with an evening symposium on "systemics" Aug. 8.

Plot inspections on Aug. 9 will be followed by a joint banquet and program with the Ohio Pesticide Institute during the evening. Visits to outlying experiments are scheduled Aug. 10. More information can be obtained from H. C. Young, Department of Botany & Plant Pathology, Ohio Agricultural Experiment Station, Wooster.

Agri-Mycin Available in New Package Size

NEW YORK—Agri-mycin-100 now is available in a new 25 lb. package, the Agricultural Division, Chas. Pfizer & Co., Inc., has announced.

The product, a formulation of terramycin and streptomycin, is used in combatting bacterial diseases of plants.

The new package is a polyethylene fiber drum. A plastic measuring cup is included in each drum. According to the firm the new package is now available from agricultural chemical and feed dealers.

SAWFLY LOSS

FARGO—Wheat stem sawfly losses in North Dakota and Montana are estimated at 8 million bushels annually.

PHILLIPS 66 AMMONIUM NITRATE

NOW AVAILABLE IN NEW POLYETHYLENE LINED 80 AND 100 POUND BAGS.

These new multi-wall polyethylene lined bags assure a free-flowing, easy-to-use-product.

33.5% Nitrogen

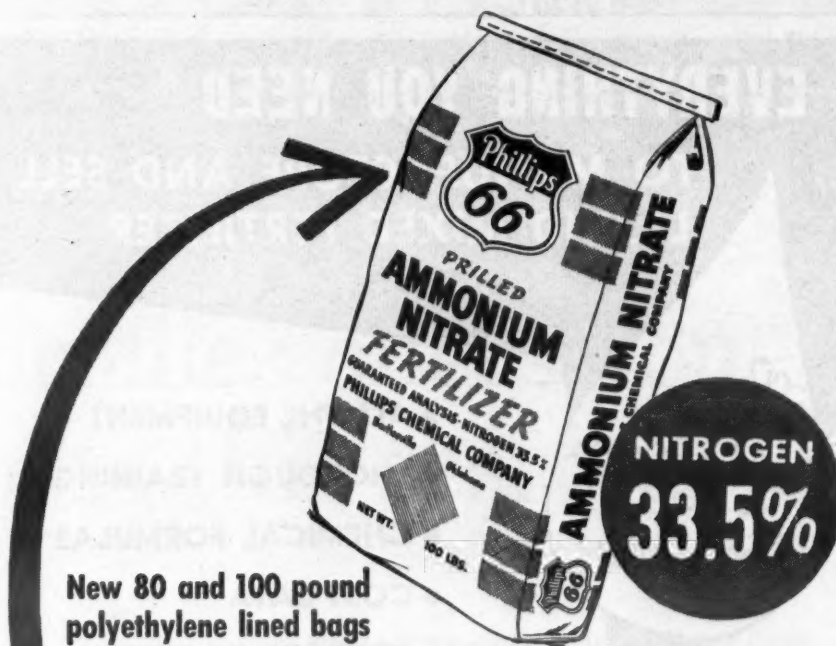
Phillips 66 Ammonium Nitrate is
guaranteed to contain 33.5% Nitrogen:

16.75% nitrate nitrogen

16.75% ammonia nitrogen

Phillips 66 Ammonium Nitrate is *prilled*. The small, coated pellets flow freely, resist caking, handle easily. This superior fertilizer is highly recommended for top dressing small grains, seed grasses; side dressing for row crops; preplant and broadcasting applications.

As a companion high nitrogen fertilizer for mixed goods, Phillips also produces Ammonium Sulfate (21% Nitrogen) in 80 and 100 pound bags.



IN A FERTILIZER, IT'S PERFORMANCE THAT COUNTS.
THIS SHIELD IS YOUR GUARANTEE OF HIGH QUALITY,
HIGH NITROGEN FERTILIZER.

PHILLIPS CHEMICAL COMPANY
A Subsidiary of Phillips Petroleum Company
BARTLESVILLE, OKLAHOMA

OFFICES:

CHICAGO, ILL.—

DENVER, COLO.—

DES MOINES, IOWA—

INDIANAPOLIS, IND.—

KANSAS CITY, MO.—

MINNEAPOLIS, MINN.—

OMAHA, NEB.—

ST. LOUIS, MO.—

TULSA, OKLA.—

WICHITA, KAN.—

7 South Dearborn St.

1375 Kearney St.

606 Hubbell Bldg.

1112 N. Pennsylvania St.

500 West 39th St.

212 Sixth St. South

WOW Building

4251 Lindell Blvd.

1708 Utica Square

501 KFJ Building

Phone: Andover 3-3472

Phone: Florida 5-7301

Phone: 3-3291

Phone: Melrose 5-8371

Phone: Logan 5125

Phone: Main 7461

Phone: Jackson 5911

Phone: Jefferson 1-6677

Phone: 7-7561

Phone: Forest 3-0294

INSECT, PLANT DISEASE NOTES

Iowa Corn Borer's Pupation Date Set

AMES, IOWA—A spring survey of European corn borer conditions was made in corn stalk fields planted to oats, where no further destruction of borers by cultural means is possible. No borers from plowed corn fields planted to oats were reported in extreme northeast Iowa.

Unseasonably warm weather has pushed ahead the expected date for pupation of corn borers, to about April 29, as compared to May 18 in central Iowa last year. If borer development runs ahead of average corn planting, a large number of moths will lay eggs on the small acreage of corn planted in April. "Any farmer who plants before May 1, had better have his DDT and his sprayer ready."

Among field crop insects, no grasshoppers have hatched yet, but if warm weather continues, young crop hoppers should be on hand by May 5. Clover leaf weevil damage is slight, and a few pea aphids are present in alfalfa and red clover.

June beetles are emerging. Along a fence row in Monona County, one adult beetle per square yard was seen. They are also appearing in Bremer County. These adults will feed on tree foliage and will norm-

ally lay their eggs in grass sod. Seed corn beetles are abundant in plowed fields. In Missouri River bottom fields, they average 1-2 per square foot.

Severe drouth in 1953 and 1954 will result in heavy tree borer damage this season. We have seen severe damage to elms and oaks from flat-headed borers. Round headed borers are abundant in cotoneaster, apple and related trees.

Leaf feeding caterpillars will begin activity soon. As soon as young cankerworms begin feeding on elms and dropping down on silk threads, spray the trees. On shade trees, add Aramite to the DDT to prevent red spider buildup.—Harold Gunderson.

Weevil, Spittlebug Found in Illinois

URBANA, ILL.—Clover leaf weevil populations in southern and south-central Illinois are decreasing, and forage crops are overcoming the early feeding damage. In north-central and northern Illinois, populations are high in occasional fields. Where necessary, treat with 0.3 lb. gamma isomer of BHC or lindane or 1½ lb. toxaphene an acre, but do not treat unless it is evident that plant growth is being retarded because of insect feeding. This may be happening in thin stands.

Occasionally a field may have enough cutworms and clover leaf weevil combined to cause some damage. If an insecticide is needed, use toxaphene. Spittlebug eggs which overwintered have begun to hatch. Examine 50 to 100 stems scattered throughout the field. Treat only fields in which the pop-

ulation averages at least one nymph per stem. Use BHC, toxaphene or methoxychlor. If there is less than one spittlebug per stem, treatment will not be profitable unless clover leaf weevils are a problem also.

Sweet clover weevil is abundant in old stands of sweet clover, where they are eating moon-shaped areas in leaf margins. Check fields of spring seedlings each week. If 50% of the foliage has been destroyed by weevil, apply 1.5 lb. DDT an acre immediately unless the grain crop has already headed.

Yellow clover aphid is building up in the Lea County area, very severe in Chaves and Eddy counties, spotted in the Mesilla Valley, severe in the Tularosa Basin, and starting to work in the Virden Valley. Aphids on roses and other ornamentals are building up to large populations in the southern half of the state, attended by numerous green bottle flies.

Thrips on onions are causing economic injury in the southern half of Dona Ana County and building up further north. Some spraying for control being practiced. Pea aphids are on the decline in the Mesilla Valley after being spotted heavy in some fields early this spring. Wasps were reported as a severe nuisance for the first time this year in Las Cruces around the middle of April.—George C. Decker.

Aphids Threaten Oklahoma Crop

STILLWATER, OKLA. — Thousands of acres of badly needed alfalfa in Oklahoma are being threatened by an infestation of yellow clover aphids. Unless controls are taken, total loss could occur in some places. The infestation could become extremely serious if the weather stays warm and natural enemies of the aphids fail to check them.

The Oklahoma Experiment Station recommends 4 to 6 oz. parathion or 8 to 16 oz. malathion an acre as a control. Rates will vary with the size of the plants and amount of foliage. The material should be mixed with 10 gal. water for ground spraying or 3 to 5 gal. water for aerial spraying.

Newt Flora, extension entomologist at Oklahoma A&M, predicts the threatened grasshopper invasion this year will be considerably lighter than was previously believed. Drouth, bee fly larvae, and other natural enemies have destroyed many of the grasshopper eggs.

Mr. Flora says, "The 'hopper infestation this year should be substantially less damaging to the farmer and homeowner than it was last year."

Alfalfa Weevil Larvae Cause Damage in Maryland

COLLEGE PARK, MD.—(April 25) —Damage to alfalfa by alfalfa weevil larvae has become very conspicuous on the Eastern Shore and in Southern Maryland. In central Maryland small larvae are beginning to feed and will increase. Adult weevils are spreading to first year fields. Heptachlor has given good control on both larvae and adult weevils.

Spittlebug on alfalfa and clover remains light, but may increase. Pea aphids are heavy on alfalfa on both sides of the Bay and are causing damage. The fungus disease which kills pea aphids has started on the Eastern Shore. If alfalfa has not been sprayed, use malathion along with heptachlor for weevil and pea aphid. It is time to spray clover over most of the State. On the Eastern Shore lesser clover leaf weevil larvae are

now feeding in leaf bracts. Use heptachlor, BHC or toxaphene for control of insects attacking clover.

Small and large cutworms were found in pasture fields in Montgomery County. Cutworms damaged corn and transplanted crop. Sod land prepared for crops should be treated before planting. Spraying ground after plowing with ½ gal. toxaphene in 25 gal. water an acre.

Pea aphids are infesting peas on the Eastern Shore. Treat peas with malathion, 1½ pt. in 25 gal. water an acre; for airplane spraying of 3 to 5 gal. water is necessary. Rubus curculios are evident on rhubarb in central Maryland.

Flea beetles are very heavy on broccoli at the University Farm, College Park, reports Dr. Ditman. Control on broccoli, cabbage and cauliflower by spraying with DDT, 1 25% emulsion to 25 gal. water. Repeat at 5 day intervals till heads begin to form; after that, if insect trouble, use malathion, 1 qt. in gal. water to the acre.—Theo. Bissell and Wallace C. Harding.

New Mexico Troubled By Clover Leaf Aphid

STATE COLLEGE, N.M.—The yellow clover aphid is still with us. Having come through the winter in good shape, it is now going to work through the southern half of the state. Here is a summary of the yellow clover aphid's activities in New Mexico.

It appeared in damaging numbers in the Pecos River Valley in the fall of 1953, but was not recognized until the spring of 1954. At that time, it was generally distributed up and down the Pecos. In June, 1954, the insect had reached the Mesilla Valley near Mesquite. By this time, Fort Sumner had reported an aphid attacking the alfalfa in that area. The infestation grew worse and extended as far as Velarde in Rio Arriba County, Tatum, Lovington, Hobbs, and was spreading west.

By late fall the aphid was found throughout the state, including the Virden Valley, the area around Grants and the Animas Valley.

Various insecticides were tried, and many killed the aphids. Practically 100 percent of the aphids were controlled by most of the insecticides used. Among the insecticides used against this insect were toxaphene, DDT, malathion, parathion, and sulfur — alone or in combinations with toxaphene and DDT.

Miscellaneous Bugs At Work in Kansas

MANHATTAN, KANSAS — No economic infestations of English grass aphids were found in wheat and barley fields in sixteen counties southeast Kansas. Greenbugs were found in six of sixteen southeast Kansas counties. Very few colonies were found and sweep-counts ranged from 3 to 5 aphids per 25 sweeps. No noticeable feeding damage was observed in any of the fields that were included in the survey. The counties in which the minor infestations were found were: Woodson, Wilson, Montgomery, Labette, Neosho, and Allen.

Pea aphids were found in alfalfa fields in all sixteen southeast Kansas counties that were surveyed. Colonies of this aphid are small and no widespread infestations have been observed to date. Counts of pea aphids ranged from 10 to 30 per 25 sweeps.

Southern corn rootworm beetles were observed in all alfalfa fields that were surveyed. Counts of beetles taken while sweeping alfalfa varied from 1 to 5 per 25 sweeps. This beetle was observed in the following counties: Shawnee, Osage, Coffey, Woodson, Wilson, Montgomery, Labette, Cherokee, Crawford, Neosho, Allen, Anderson,

HAMMOND
Multi-Wall
PAPER
BAGS
HAMMOND BAG & PAPER CO.
General Offices: Wellburg, W. Va.
Plants in Wellburg, W. Va.
Pine Bluff, Ark. - Charlotte, N. C.

EVERYTHING YOU NEED TO MANUFACTURE AND SELL LIQUID MIXED FERTILIZER



- ALL THE EQUIPMENT
- THOROUGH TRAINING
- CHEMICAL FORMULAS
- COST DATA
- SOURCES OF SUPPLY
- MERCHANDISING AIDS

as low as \$8,600.00

We furnish everything you need to manufacture and sell liquid mixed fertilizer—all you need is the building site. Our experience and research at the Midstate pilot plant in Clinton, Illinois, helps you build a sound business in liquid mixed-fertilizer manufacturing and selling. You or anyone you designate will be trained and taught every phase of manufacturing and selling at our plant. We have a complete package deal including all the equipment, complete training, cost data, chemical formulas, etc. "Package plants" are available in capacities from 10 to 50 tons per hour. If you are interested in making more profits with a minimum of investment we strongly urge you to write us so we can rush all the information to you. A 15 ton per hour plant will service your local trade area, the cost is \$8,600.00 and you are in business. Nitrogen storage additional.

WRITE TODAY AND BE THE ONE IN YOUR AREA TO MAKE THE PROFITS FROM FERTILIZER

MIDSTATE MACHINERY CO.

359 EAST MAIN DECATUR, ILL.

TELEPHONE 8-4363

acts. Use phenol for checking clover.

light to severe infestations of the grain mite were found in eastern Kansas. Areas in the where this mite is feeding are observed by the appearance of injured plants. Infestations may require insecticidal control in Montgomery, Labette, Cherokee, Neosho, Wilson, and Crawford counties. Counts range from 50 to an average of 600 mites per linear foot of row.

The first nymphs of the destructive species of grasshoppers to hatch were observed in southern year were observed in southern year, Neosho, and Crawford and in Montgomery, Labette, and Cherokee counties. Counts in a few localized areas averaged about five nymphs per yard. The numbers of the tiny grasshoppers will increase within the next three weeks as the recent rain and continuing warm weather will offer optimum growing conditions for the hoppers.

Alfalfa Weevil Threat in New Jersey

NEW BRUNSWICK, N.J. — Many European red mite crawlers are found on April 18 in central and northern New Jersey. Orchards requiring either a delayed dormant oil or a dormant DNB (DN-289 or DN-318) show a few young crawler on twigs and young leaves.

Pea aphid populations are not yet high but presence of the alfalfa weevil in south Jersey areas necessitates prompt treatments in that area. We feel only major damage will occur south of Camden.

In extreme south Jersey where alfalfa weevil, pea aphid and spittlebug threaten, a 1% lindane dust, sprays of 0.25 lb. lindane an acre, or a mixture of 0.25 lb. of heptachlor or 0.25 lb. of parathion will kill three pests. For central Jersey, where spittlebug will dominate but where pea aphid may appear, lindane is a good bet or the same heptachlor-parathion mixture may be used.

Corn flea beetles will be active on sweet corn emerges. Beetles carry Stewart's disease or bacterial wilt. DDT dusts (5%) or sprays of wettable powder at 1½ to 2 lb. of wettable powder an acre; repeated at 7 to 10 day intervals or when beetles reappear. This will kill beetles and greatly reduce incidence of disease. Reports of some activity of the spinach aphid have been received from Cumberland County. 1% parathion or 4% malathion dusts will control these pests before they build big populations and cause leaf damage.—Leland G. Merrill, Jr. and Homer H. Davis.

Lawrence Reports Weevils, Beetles

NEWARK, DEL. — Increase of alfalfa weevil in all untreated fields; also in Smyrna, Milford, and Bridgeville areas severely damaged. Small masses of meadow spittlebug conspicuous, but not generally numerous. Pea aphid populations moderate-abundant at most places; heavy infestation of alfalfa about Milford and Bridgeville.

Asparagus beetle injury observed from Dover to Bridgeville. To protect shoots, apply ¼-1% rotenone dust at 35-40 lb. an acre (3 lb. 5% rotenone powder in 100 gal. water per acre). Methoxychlor (5% dust 3 lb. 50% w.p. at same per-acre rates) should not be used within 7 days of cutting on account of residue regulations.

Where meadow spittlebug and/or weevil are active on strawberries, suggest pre-harvest methoxychlor or spray as specified above. Hatching of European red mite commenced April 14th. All three species of aphids on apple scarce to date. As of April 18th, 45% of apple scab

spores had been "shot"; 45% were "ripe"; and 10%, still immature. First primary scab infection and frog-eye leafspot recorded in Dover-Camden area on the 19th.—L. A. Stearns and J. W. Heuberger.

Alfalfa Weevils Spread Damage in Virginia

BLACKSBURG, VA. — Alfalfa weevils are causing severe damage to alfalfa in northeastern Virginia and the insects are likely to spread to other non-infested areas of the state, according to Arthur P. Morris, associate extension entomologist at VPI.

Newly hatched larvae are about 1/25 of an inch long and yellow, except for the head which is usually a shining black. When they are full grown they are about ¾ in. long, and the body is green with a white stripe down the center of the back.

To control the outbreak, either spray or dust the following: methoxychlor, 1 to 2 lb. an acre; parathion, 4 oz. an acre; aldrin, 2 oz. an acre; lindane, 1 to 2 oz. an acre, and heptachlor, ¾ oz. an acre. Alfalfa should be treated as soon as the larvae are detected.

If a ground sprayer is used, at least 6 gal. spray an acre is needed; if the application is made with an airplane, as little as 2 gal. is sufficient.

Dusts commonly used are 10% methoxychlor; 1% parathion, aldrin, or lindane; and 2½% heptachlor.

Florida Reports Variety of Insects

GAINESVILLE, FLA. — Corn earworm was collected from field corn at Gainesville. Only two larvae were found in several hundred plants examined. Yellow-striped armyworm in the larval stage was collected from field corn. Only one larva was found in corn.

Chinch bug averaging 150 eggs, nymphs and adults per square foot was infesting St. Augustine grass at Gainesville. This is the first record this year here and is very early for damage this far north.

Yellow-striped armyworm causing negligible damage was collected from tobacco at Gainesville. Two larvae were collected.

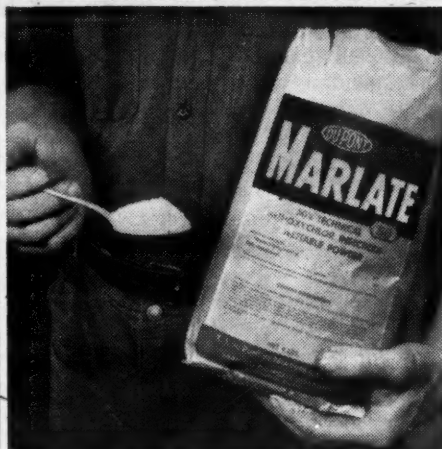
Black turpentine beetle in the larval stage was collected from slash pine at Hilliard, Nassau County. No counts were made. Leaf beetles averaging 25 adults per groundsel-bush were found at Vero Beach, Indian River County. Defoliating plants are rather widespread. Wild cherry web-spinning saw-fly in the larval stage averaging 100 or more per plant was collected from a common wild cherry tree at Gainesville.—H. A. Denmark.

Insects Beginning to Hatch in Indiana

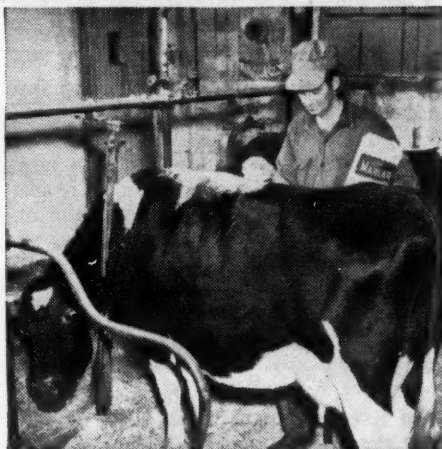
VINCENNES, IND. — Heavy rains, accompanied by cooler temperatures, prevailed in this area from April 22 through April 25, making the control of apple scab the foremost problem during the above period. Rainfall during the period totaled 3.16 in. at

(Continued on page 21)

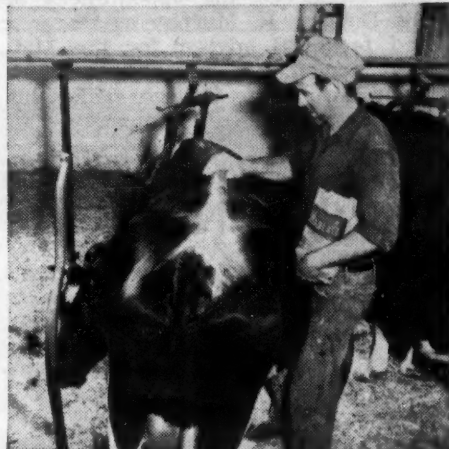
NEW FROM DU PONT...



Now, hornfly control on cattle can be fast, simple, and cheap! Heaping tablespoonful of "Marlate" does the job for two to three weeks.



Sprinkle "Marlate" over neck and back of animal and rub it in gently against hair. No mixing, no sprayer needed to kill hornflies this way!



"Marlate" is especially suited for the new hand-dusting method because of its low toxic hazard to humans and livestock.

This simple method of killing hornflies offers you new profits this season!

Cash in on this new way for dairymen to kill hornflies...

Get the facts on this big profit opportunity from your Du Pont distributor. If you are not now carrying Du Pont products, use the coupon below. "Marlate" 50 comes in convenient 4-lb. bags, 12 to a case. Also, sell "Marlate" 50 for spraying barns and premises. Be sure to stock a good supply before the fly season starts.

Du Pont advertisements in these farm papers will tell your dairymen about this simple new way to kill hornflies...

Ohio Farmer	Wisconsin Agriculturist
The Farmer	Western Dairy Journal
Prairie Farmer	American Agriculturist
Michigan Farmer	Dairy Breed Publications
Penna. Farmer	New England Homestead
Hoard's Dairyman	Kansas City Star Farmer
	Progressive Farmer

MARLATE® 50

Methoxychlor Insecticide



BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Department
Room 4032—Du Pont, Wilmington, Del.

Please advise me of the nearest source of supply for "Marlate" 50.

Name _____

Firm _____

Address _____



Douglas R. Murphy

Douglas R. Murphy Joins Stauffer Chemical

NEW YORK—Dan J. Keating, director of sales, Agricultural Chemicals Division, Stauffer Chemical Co., has announced the appointment of Dr. Douglas R. Murphy as research and technical adviser for the Midwest region. Dr. Murphy, a Ph.D. from Iowa State College, makes his headquarters in the company's Chicago office.

Hercules Net Sales, Revenues Increase

WILMINGTON—Hercules Powder Co. reported for the three months ended March 31, 1955, net income, after preferred dividends, equal to \$1.54 a share of common stock.

In the first quarter of 1954, the company reported net income of \$1.21 a share of common stock.

Net sales and operating revenues for the quarter were \$53,130,708, compared with \$43,564,002 in the first quarter of 1954.

Spencer Sales For Nine Months Show Increase

KANSAS CITY—Record sales and profits were reported by Spencer Chemical Co. for the third quarter of its fiscal year ended March 31.

Net sales for the three months ended March 31 were \$12,386,987, up from \$10,214,278 a year earlier.

This increase was made possible by the company's greater capacity for the production of nitrogen products and larger storage facilities which permitted the accumulation of inventory during the six months to Dec. 31 to meet the peak demand that takes place during the last half of the company's fiscal year, Kenneth A. Spencer, president, said.

The 9-month fiscal year's sales reached \$26,588,134, compared with \$24,667,912 a year earlier.

Net income for the third quarter was \$2,043,352, equal to \$1.68 a share on the 1,124,855 shares of common outstanding. This compared with net of \$1,493,940, or \$1.26 a share on 1,061,122 shares, the average number outstanding in the like period a year earlier.

During the quarter the company charged to operations about \$600,000 in non-recurring expenses, most of which were accumulated at the new Orange, Tex., polyethylene works over a period of several months prior to start-up, Mr. Spencer said.

The 9-month net was \$3,610,300, equal to \$2.83 a common share, against \$3,629,843, or \$3.09 a share on the smaller capitalization a year earlier.

"The outlook for the balance of the fiscal year to June 30 is good," the company's president asserted. "In spite of the increase in the national production of nitrogen materials, Spencer's facilities for producing these products continue to operate at capacity and its sales are at a high level."

CENTENNIAL GROUP RECEIVES OSCAR

PHILADELPHIA — The National Entomology Centennial Program Committee has been awarded the "Oscar" of the American Public Relations Assn. At its annual awards luncheon here recently, the association presented its highest award to the committee for the 1954 program to observe the 100th birthday of entomology. The award, a silver anvil, was presented to David G. Hall, Department of Agriculture, who was chairman of the centennial committee.

American Cyanamid Sales Show Gain

NEW YORK—American Cyanamid Co. has announced the operating results for the first three months of 1955.

Net sales of the company and its wholly-owned subsidiaries were approximately \$111,643,000 as compared with \$98,205,000 for the first quarter of 1954 and \$104,266,000 for the fourth quarter of 1954.

Consolidated earnings before tax approximated \$18,454,000 for the 1955 quarter as against \$14,303,000 for the corresponding quarter of last year.

The provision for federal and foreign taxes on income was \$9,000,000 and in the preceding year the quarterly amount was \$6,700,000.

Consolidated net earnings were \$9,454,000 against \$7,603,000 for the 1954 period.

Common stock outstanding increased to 8,728,810 shares at March 31, from 8,722,921 shares at Dec. 31, 1954, as the result of conversions of preferred stock during that period.

After deducting dividends on preferred stocks (\$571,406 for 1955 and \$47,896 for 1954), net earnings applicable to common stock for the first quarter of 1955 amounted to \$1.02 per share based on common stock outstanding March 31, compared with \$.87 per share for the first quarter of 1954 based on shares outstanding at the end of 1954.

Lion Earnings for Quarter Set Record

EL DORADO, ARK.—Earnings of Lion Oil Company for the first quarter of 1955 were announced recently by T. M. Martin, president, as being the highest in any three-month period in the history of the company.

Net income for the quarter, after provisions for taxes on income, was \$5,247,157 or \$1.70 per share of stock outstanding. This represents an increase of 51% over the similar figures for the same quarter of 1954 which were \$3,468,610 or \$1.12 per share.

Sales and operating revenues for the period were \$30,499,164 in comparison with \$26,285,357 for the first three months of the previous year. Net income before tax provisions amounted to \$7,089,795 as compared with \$5,249,107 for the same period a year ago. Provisions for taxes were \$1,842,638 as against \$1,780,497 for the first quarter of 1954.

Mr. Martin stated that the effect of the new Barton Plant is shown in the sharp increase in sales revenue.

EXTENSION DIRECTOR NAMED

WASHINGTON—Ezra Taft Benson, secretary of agriculture, has announced Department of Agriculture approval of Paul A. Miller as director of extension in Michigan, effective April 1. Mr. Miller was recently named by the governing body of Michigan State College to succeed D. B. Varner who has become vice president of that institution.

W. R. Grace & Co. Sales, Revenue Reach Record High

NEW YORK—Exceeding the million-dollar mark for the first time, sales and operating revenues of W. R. Grace & Co. reached \$413,401,979.665 in 1954 as compared with \$397,979,665 in 1953, according to company's annual report to stockholders.

Net income totaled \$14,794,338 compared to \$12,585,688 for the previous year, an increase of 17.5%.

Based on the average number of common shares outstanding during 1954, per share earnings amounted to \$3.50. Per share earnings were \$3.27 in the previous year.

Including the equity in earnings of excess of dividends received from non-consolidated subsidiaries and 50% owned companies, total earnings for the year amounted to \$3.95 per common share compared with \$3.50 in 1953. All per share earnings are adjusted to reflect the merger of Dewey and Almy Chemical Co. which was consummated during the year.

The centennial-year report of W. R. Grace & Co. disclosed that U. S. chemical properties now represent a total of \$71,000,000 or 54.4% of total net fixed assets of the company and went on to declare that "there has been no lessening of the traditional activities of the Grace Organization in Latin America, an area in which we are consistently making substantial new investments in diversified fields."

The report notes that all the properties, assets and business of the Davison Chemical Corp., major subsidiary of which had been previously owned by Grace, were fully acquired by merger in 1954. After the merger the operations of the Thurston Chemical Division and the Naco Fertilizer Co. (W.Va.), a wholly owned subsidiary, were consolidated with the Davison Division.

Net sales for the division showed an overall increase of 7% in 1954 over 1953. The gain was achieved through a 9% increase in industrial chemicals, 18% in superphosphate and phosphate rock, and 4% in mixed fertilizers.

Sales of superphosphates and phosphate rock increased substantially with the opening of Davison's new triple superphosphate plant, with an annual capacity of 200,000 tons, at Bartow, Fla. Net income before taxes in 1954 amounted to \$5,845,600 compared with \$5,285,838 in 1953.

Davison's 1955 production will be considerably enlarged by two new plants which did not reach full capacity operations until the end of 1954—the Bartow triple superphosphate unit and a sulphuric acid plant at Joplin, Mo., with an annual capacity of 70,000 tons, the report states.

In evaluating the outlook for 1955 the company told its stockholders that "your management's market research and economic surveys, supported by many independent economic indicators, substantiate our belief that 1955 should show satisfactory factory revenues and earnings in both our domestic and foreign operations."

The theme of W. R. Grace & Co. 1954 Annual Report is "Entering Second Century." The company has its beginnings in the port of Callao, Peru, in 1854.

NORTH CAROLINA LIME SALES

RALEIGH, N.C.—Sales of agricultural liming materials and land plaster in North Carolina totaled 245,643 tons during the last half of 1954 according to the North Carolina Department of Agriculture.

Buying . . .

. . . Selling

CROPLIFE

Want Ads

For Best Results



HYPRO MODEL 750

reduce costly
pump service
calls with
HYPRO!



Here's a word on HYPRO Sprayer Pumps that may save you many costly, profit-consuming service calls this season: An aircraft crop spraying company operated several spraying units equipped with HYPRO Model 750 pumps last season. During 4 months of "dawn to dusk" spraying, their HYPRO pumps operated without a single breakdown and with no servicing whatsoever. At the season's end, they required only minimum maintenance by the company. Prior

to using HYPRO pumps, the company had been forced to service pumps almost every night.

Isolated instance? Good luck? No indeed, superior performance that is being duplicated by HYPRO Pumps everywhere. Performance achieved because of the most modern pump engineering thinking and careful, quality controlled manufacture. Truly built for longer life and satisfied user service. Factors that mean big savings in service calls for you.

for details . . .
write today to:

HYPRO ENGINEERING, INC.

706 39th Avenue N. E. Minneapolis 21, Minnesota



Rudolph Groth-Marnat

Rudolph Groth-Marnat Named Manager of Brea Export Sales

LOS ANGELES—Rudolph Groth-Marnat has been appointed manager of export sales for Brea Chemicals, Inc., subsidiary of the Union Oil Co. of California, it was announced April 2 by H. R. Fifer, Brea vice president in charge of marketing and distribution.

Mr. Groth-Marnat was formerly Southern California manager of the Import-Export division of Grace & Co. (Pacific Coast).

According to Mr. Fifer, Mr. Groth-Marnat will be responsible for the development of export markets for Brea's agricultural and industrial ammonia products as well as new chemical products developed by Brea's research department.

Mr. Groth-Marnat was graduated in 1935 from Holzminden, Germany, and from 1935 to 1936, he attended Cambridge University in England, where he continued his study of chemistry and physics.

He served his apprenticeship in import/export and banking with Nottebohm and Co., Hamburg, Germany, from 1937 to 1939. He returned to Mexico City in 1939, where he later became manager of sales and service of automotive electrical equipment and fuel injection systems for Mexican agencies of Sommer, Herrmann, y Cia, Sucs. From 1944 to 1947, he was purchasing agent and sales manager for Chapas y Triplay, S. A., plywood manufacturing concern in Mexico City.

Mr. Groth-Marnat came to the U.S. in 1947 and assumed his position with Grace & Co.

New Labeling

Recommendations for Heptachlor Announced

CHICAGO—The U.S. Department of Agriculture announced new label recommendations for heptachlor formulations as emulsifiable concentrates, wettable powders and dusts. These recommendations cover the use of Heptachlor for controlling armyworms and cutworms. The new expanded recommendations include:

Heptachlor 2E-Emulsifiable (2 lb. Heptachlor per gallon)—For control of armyworms on alfalfa and clover: 23.41% Heptachlor. This specification applies for control of cutworms on alfalfa, clover and tobacco.

Heptachlor 25% Wettable Powder—For the control of armyworms on alfalfa and clover: 25% Heptachlor. This specification applies also to control of cutworms on tobacco as well as alfalfa and clover.

Heptachlor 2½% Dust—For the control of cutworms on alfalfa, clover and tobacco: 2.50% Heptachlor. This specification also applies to armyworms on alfalfa and clover.

CSC Quarter Earnings Increase

NEW YORK — Commercial Solvents Corp. reports for the quarter ended March 31, 1955, consolidated net earnings of \$814,186, equal to 31¢ a share on 2,636,878 shares of common stock. Sales for the quarter were \$12,946,209.

During the first quarter last year sales were \$11,989,382 and net earnings were \$626,634, equal to 24¢ a share on the same number of shares.

Number of Du Pont Stockholders Increases

WILMINGTON—E. I. du Pont de Nemours & Co., Inc., was owned by 151,835 stockholders as of March 31, 1955, an increase of 2,421 over the number of holders recorded at the close of 1954. The total also was 3,737 over the number on March 31, 1954.

There were 136,460 holders of common stock and 21,897 holders of preferred stock as the first quarter period of 1955 ended. These figures include 6,522 holders of more than one kind of stock. Every state in the union is represented among the owners of the company.

Conference to Consider The Atom in Agriculture

NEW YORK—Utilization of nuclear energy in the resolution of special problems in agriculture and silviculture will be a part of the topical agenda of the International Conference on the Peaceful Uses of Atomic Energy. The conference will convene in Geneva, Switzerland, Aug. 8, 1955.

Subjects listed for discussion will be agricultural pests and diseases, the movement of various components from soil to plants (including a discussion of fertilizers and other materials affecting plant nutrition), plant genetics and crop improvement, utilization of nuclear energy in tropical agriculture and the role of rare elements.

Sessions on the applications of radioisotopes to research and industrial problems will include discussion on radiation sterilization of foods. Fundamental studies (enzyme destruction, oxidation effects, inhibition of

reactions), feeding studies and the economic aspects of radiation sterilization will be some of the subjects covered. Also included will be papers describing the special usefulness of radioisotopes in industry and in research.

The importance of isotopes in agriculture will be outlined in sessions on production and use of isotopes.

New Cotton Variety

EL PASO, TEXAS—Pima S-1 is becoming one of the most important cotton varieties in the Rio Grande Valley. The allotment for the El Paso area has been increased from slightly over 10,000 acres in 1954 to 37,000 for this year. In the Dell City area where 10,000 acres are planted to cotton, farmers will go nearly 100% for Pima S-1. This type of Pima is a new variety of American - Egyptian long staple cotton, and made its first appearance in West Texas about 1951.

THE MARKLEY LABORATORIES

Max C. Markley, Ch.E., Ph.D.; H. S. Markley, B.Ch.

Complete fertilizer testing service for manufacturers and mixers.

312 Fourth Avenue South
Minneapolis 15, Minnesota

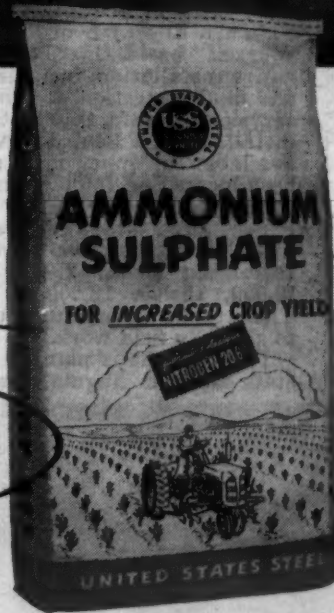
Lexington
Nebraska

TWO BIG summer markets for USS Ammonium Sulphate...

► for sidedressing young corn

► for topdressing pastures

Available in 100 pound bags
and bulk



Now is the time to stock up on your USS Ammonium Sulphate for the big corn sidedress demand that will be starting up in just a few weeks. Farmers who have neglected to plow under sufficient nitrogen *must* sidedress to get top yields. Urge them to do it *early* so that the rain will have a chance to carry the nitrogen down into the root zone where it will give best growth results. Avoid root pruning by sidedressing at the first cultivation.

USS Ammonium Sulphate has proved an ideal nitrogen source for corn sidedress because it is so easy to use... always dry and free-flowing and less corrosive than similar materials.

Another important summer market for USS Ammonium Sulphate is pasture topdress, after

the first grazing. Nitrogen-enriched soils produce heavy yields of high protein grass. And, nitrogen promotes quick regrowth, boosts the carrying capacity of each acre during the season.

For pasture topdress too, USS Ammonium Sulphate is very popular. Its ammonia nitrogen resists leaching yet is available when the plants actually need it. Promote the use of nitrogen for corn sidedress and for pasture topdress this summer. Remember that better yields for farmers mean bigger business for you. And for best results from nitrogen, sell USS Ammonium Sulphate.

USS AMMONIUM SULPHATE



UNITED STATES STEEL

Stauffer Earnings, Sales Show Gain

NEW YORK—First quarter earnings of \$1,579,454, or 67¢ per share, were reported by Hans Stauffer, president, Stauffer Chemical Co. Comparable 1954 figures were \$1,124,279, or 48¢.

First quarter 1955 net sales at \$22,146,779 were 23% above those for the corresponding period last year. Pre tax earnings were \$3,029,454 and provision for federal income taxes \$1,450,000.

The directors of Stauffer increased the regular quarterly dividend rate from 32½¢ to 37½¢ per share of common stock, and declared a dividend of 37½¢ per share, payable June 1, 1955, to stockholders of record at the close of business on May 18, 1955.

EXPERIMENTAL FARM

SIBLEY, IOWA — The Northwest Iowa Experiment Farm Assn. has raised about \$32,000 of its \$50,000 goal to purchase an experimental farm. The association, formed last December and involving 10 counties, is raising the money from the sale of \$10 shares.

Dust Storms Hit Southwest Again

KANSAS CITY—The worst dust storms of the year hit the dryland areas of the southwestern wheat belt last week-end and are likely to have caused further crop losses in that already hard hit area. Whipping winds of high velocity tore loose topsoil of many fields in the dust bowl area of western Texas, Oklahoma, southwestern Kansas and southeastern Colorado, with the latter state suffering the most.

Wind velocity was as high as 87 miles per hour in some places and dust was carried up to 12,000 ft.

Scattered showers were received in parts of the Texas panhandle and at points in northwestern Kansas, while substantial rains fell over Nebraska, heavy in the eastern end and tapering off to moderate amounts in the west.

Wheat conditions now show a considerable variation throughout the Southwest. There are some very poor areas in the extreme drouth section that embraces the area stretching from the top of the Texas panhandle, through the panhandle of Oklahoma and into the southwestern corner of Kansas and much of southeastern Colorado.

In most of the rest of the wheat

country, conditions range from fair to good and the crop has responded well to the good rainfall received a fortnight ago. Topsoil conditions are slightly better than last year but subsoil moisture reserves are low and frequent rainfall will be needed for normal crop development in the good areas.

Rains General in Spring Wheat Area

MINNEAPOLIS—The widespread rains and cool weather brought seeding to a halt in many spring wheat areas, according to crop condition reports.

Many areas of Minnesota and North Dakota would be aided by some dry weather, and some warm weather and rain would be helpful in South Dakota, according to a report from Peavey Elevators. Nearly all the wheat and durum and 75% of the oats and barley are now already seeded as far north as central North Dakota, states the Peavey report. Stands of early grain are good for the most part. The crop season has been timely or a little early thus far.

Rains were widespread also in Montana where field work was held up.

More Wind Damage Noted in Southern Great Plains

WASHINGTON—The U.S. Department of Agriculture reported April 25 that as of April 20 more than 11 million acres of land in seven southern Great Plains states had been damaged by wind erosion since last November. This is three million acres more than were reported as of April 1. (See Croplife, April 25, page 17.) These estimates are based on information compiled by the Soil Conservation Service.

Ezra Taft Benson, secretary of agriculture, and a party of USDA officials, congressional representatives, and others, recently completed a three-day investigation of drouth and dust conditions in Colorado, Kansas, Oklahoma, Texas and New Mexico. USDA announced April 21 that the secretary would view the area in light of a new action program for reshaping the department's efforts in treating the problems brought on by drouth in the Southern Great Plains.

In addition to the more than 11 million acres damaged so far this season, the April 20 report showed that another 19 million acres were in condition to blow. These 19 million acres lacked adequate vegetative cover to prevent soil blowing if high winds and drouth persist through the late spring and early summer.

More than 11 million acres of the land damaged were in the five southern states of the Great Plains—eastern Colorado, western Kansas, western Oklahoma, western Texas and eastern New Mexico. Also, more than 15 million acres in condition to blow were in this area. The balance of land damaged and that in condition to blow lie mainly in southeastern Wyoming and southwestern Nebraska.

Field Work Interrupted in Western Canada

WINNIPEG—Snow and rain with as much as 16 in. of the former falling in sections of southern Alberta interrupted field work and seeding operations in western Canada. A few days of warm, drying weather, however, would permit the resumption of field work in most regions by April 27. Waterlogged soil, chiefly in the Red River Valley and along the Assiniboine River, extending westward about 50 miles from Winnipeg, will require a week to 10 days of ideal drying weather to permit cultivation and seeding. An early start in wheat seeding could mean an increase in acreage to that grain but any delay in planting time would undoubtedly prompt a reduction in view of the serious rust threat predicted for this season.

Plant pathology scientists in Winnipeg continue their rust warnings to producers and are urging them to sow Selkirk wheat wherever possible within the area threatened with infestation. This extends well into the province of Saskatchewan as well as all of Manitoba.

Spring Work Ahead of Schedule in Michigan

DETROIT—Spring planting is a little ahead of the usual time of this locality, reports the Wayne County agricultural agent's office.

The early appearance of blossoming trees is surprising because of the exceptionally cold winter experienced in this vicinity. The Wayne County Agricultural Office reveals that during the three-month period of December, January and February, temperatures were actually ten degrees colder than is customary.

BEAIRD ANHYDROUS AMMONIA EQUIPMENT

Since the introduction of anhydrous ammonia as a commercial fertilizer, Beaird engineers have worked closely with the industry to develop special equipment for handling this nitrogen-rich liquid fertilizer. Behind the Beaird line of anhydrous ammonia equipment is the experience of thirty-six years in manufacturing pressure storage vessels for the petroleum and chemical industries.

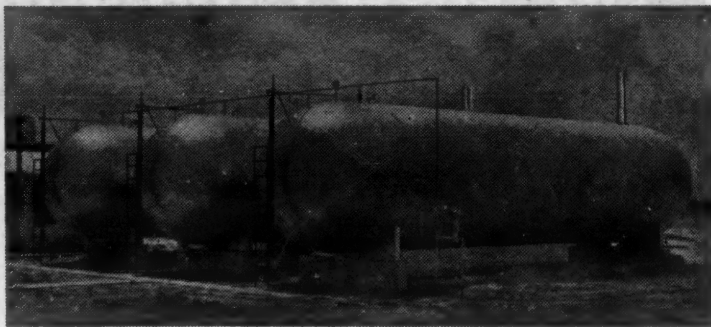
PACKAGED STORAGE INSTALLATIONS

Available on "Turn-Key" or "Install-it-yourself" basis

Now you can install bulk storage for anhydrous ammonia as a complete packaged storage plant. You may order it as a "Turn-Key" job or on an "Install-it-yourself" basis. On "Turn-Key" jobs the entire installation, including all assembly and final inspection, is handled by Beaird service engineers. On "Install-it-yourself" installations, a Beaird service engineer is available for supervision after tank has been located on foundations and is ready for piping.

Packaged storage plants may be installed with one or more tanks of the following sizes: 2,000, 3,000, 6,000, 12,000, 15,000, 18,000 or 30,000-gallon. These tanks are manufactured in our Shreveport factory and tested by X-Ray. Piping is pre-assembled to simplify field work.

Plant layout is planned to fit your individual needs and the entire installation engineered to meet state and code regulations.



PACKAGED STORAGE STATIONS—3,000, 6,000, 12,000 and 15,000-gallon. This patented Beaird development is delivered complete, ready to operate. Includes integral steel pontoon type foundations and all necessary fittings, pump or compressor and safety controls.

TRAILER TRANSPORTS—twin-tank 5,400-gallon transport. Mounted on heavy duty tandem axle assembly. Smartly designed and finished in white enamel over primer coat.

TRUCK AND TRAILER TANKS—500 and 1,000-gallon. 1,000-gallon tanks made in 41" and 46" diameters, equipped with interior baffles and meet all state regulations. Available unfitted or fitted with highest quality fittings for top, or bottom withdrawal. Hose assembly supplied upon request. Extra fill valve coupling for dual filling to cut filling time in half. Finished in white enamel.

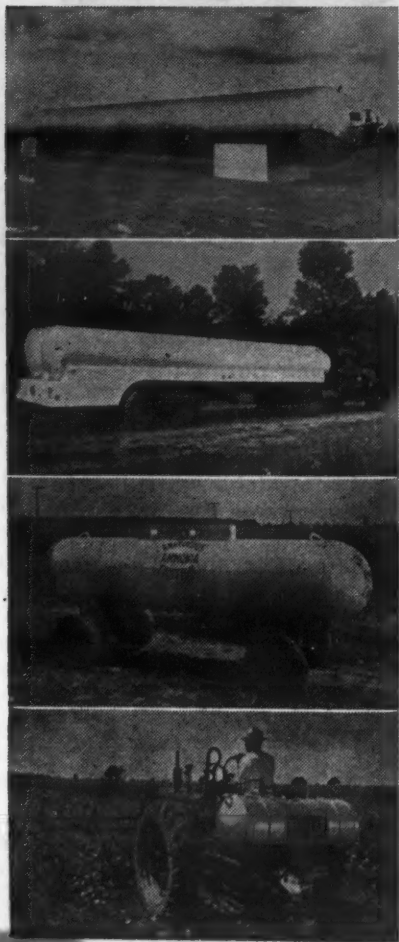
APPLICATOR TANKS—for mounting on applicator unit or tractor. Made in following sizes: 110, 150 and 200-gallon. Available unfitted or fitted with highest quality fittings. Finished in white enamel.

Let us quote you on your requirements for anhydrous ammonia equipment.

BEAIRD

THE J. B. BEAIRD COMPANY, INC.

SHREVEPORT, LOUISIANA



Better Selling

Richer
Fields for
Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

Illinois Firm Sparks Community Better Farming Program

Benefits From Improved Farm Production Practices Reach From the Furrow to Main Street

By H. R. LATHROPE

Agronomist, Nitrogen Division,
Allied Chemical & Dye Corp.

PONTIAC, ILL.—A significant increase in corn yield with a corresponding reduction in production cost per bushel has resulted from the activities of the "Pacemakers," an organization of Livingston County, Ill., farmers who participated in a post graduate course in corn production. Termed "the most outstanding and effective adult educational program in the nation," this group has come to realize the benefits of adequate fertilization and use of other modern practices to make farms earn more per acre.

The Livingston County Pacemaker Club is said to be the only group of its kind operating with private capital. Steve Turner, operator of Turner Fertilizer Service, Pontiac, Ill., and Dr. Jerry Lyons, also connected with

the firm, are the "professors" of this school and some 90 Livingston County farmers are the "students."

During the season the Pacemaker Club works and plans to secure valuable facts rather than to obtain sensational corn yields. The group followed an intelligent and systematic approach to the problem of low yields of corn and oats.

The fathers and grandfathers of present-day Livingston County farmers had been growing corn there since before the Civil War. For more than 100 years, these farmers had been receiving helps from the state's educational institutions and farm advisers have assisted the corn growers for the past thirty years or more. Today, modern media of radio and television as well as the helpful influence of hybrid corn and up-to-date

farm machinery and equipment, not to mention good roads, all contribute to the over-all well being.

Level fields, once fertile and of good tilth, are still black and deep. But yields in spite of all the help, are still around 50 bu. corn per acre and the oat yields are around 30 bu. Good stands of legumes are hard to find. Soils are acid and from three to five tons of lime per acre are needed to sweeten the sour soils to a pH of 6.8 and provide crops with an available supply of calcium and magnesium.

Constantly rising prices of machinery, labor, seed and other overhead costs have narrowed the margins of profits for both the tenant and landlord as well as for the farm-owner operator. Machinery men have had to extend credit to farmers be-

cause there was not enough ready cash from crops to pay for new equipment, to replace worn out plows, tractors and cornpickers.

It was in such a situation that Steve Turner saw the warning signals ahead. He noted the decline in farm prices and the rapid rise in production costs with the inevitable narrowing margins of profit for these 2,500 Livingston County farmers. It did not present a pretty picture. But Mr. Turner is a thinker, planner and "doer." He knows that a wider margin of profit means more money in the bank, better homes, schools, churches, hospitals and more farm boys and girls with college educations. It was apparent that the better life is not in sight with production at the low figure

(Continued on page 13)



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN

Croplife Merchandising Editor

Dealers and others in the fertilizer industry have shown considerable interest in a piece of investigative work which Marvin A. Anderson, associate director of extension work in Iowa, has guided for a number of years. This work is concerned with the sources important in the acceptance and use of fertilizer.

Croplife will report fully on this informative material which has been brought up to date within the last few months but at the risk of stealing a little of the thunder of this report a few observations can justifiably be made.

Mr. Anderson reported briefly on the survey conducted on factors influencing fertilizer use at last fall's meeting of the American Society of Agronomy. Dealers were greatly interested in his comments for in them are to be found many clues which lead to more fertilizer sales.

What Influences Use of Fertilizer

For example, over one-half of the farmers now using fertilizer reported in Mr. Anderson's survey that they got started because they saw their neighbors, friends, landlords or other farmers using it. This is important to the dealer because he can point out to a "doubting Thomas" the crop stand and yield differences between an unfertilized field and a fertilized field. This is most convincing and proves that demonstrations are valuable sales tools.

In this study, one-fifth of the farmers using fertilizer indicated they were motivated to use fertilizer from reading newspapers, farm journals and farm magazines. This should indicate to the dealer the value of publicity—either through advertising or the news columns.

One-fifth indicated the most important source was bulletins and other published material from Iowa State College. Herein lies the significance of the wealth of material avail-

able to the dealer and prospective fertilizer user from the state colleges and universities.

Some Other Factors

A storehouse of information, the survey showed also that a fertilizer user could be characterized generally as having more capital and a larger farm, having had the benefit of more years of education, being somewhat younger, and having had fewer years of farming experience than the nonuser.

According to Mr. Anderson's report, "The results of this study indicate the strategic and increasing importance of fertilizer dealers and salesmen as sources of technical information during this era of rapid technological changes in the fertilizer industry. An important result of this trend is that a greater burden is placed on handlers of fertilizer to have available for farmer distribution the most recent technical literature on fertilizers and to be able to understand and answer questions raised by farmers."

FORMAL OPENING

MAYNARD, MINN. — A formal opening of the Maynard (Minn.) Co-operative Co. was observed here recently.

Soil Insecticides Pay for Themselves—And Then Some

URBANA, ILL. — Insecticides applied to the soil to help protect a corn crop will pay for themselves and then some, according to farmer experience and research in Illinois in the past two years.

J. H. Bigger, entomologist with the Illinois State Natural History Survey, says that returns averaged about twice the cost of the insecticides last year.

Treated soil produced an average of 750 more plants to the acre than untreated soil in 111 comparisons. Theoretically it takes about 350 more plants to pay for the cost of treatment. Mr. Bigger reports that where the insecticide was properly used, the increases were much greater than that in many cases.

Fertilizer on One Crop Helps Others in the Rotation

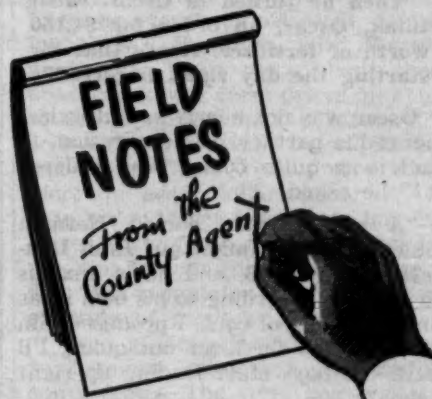
COLUMBUS — When one crop in the rotation is fertilized, the plant food's carryover power helps boost the yields of all the other crops, too, reports H. J. Mederski, Ohio State University agronomist.

Mr. Mederski said that corn yields were increased 15 bu. per acre in Ohio tests, when 500 lb. of a nitrogen-phosphate-potash fertilizer was broadcast for corn in the rotation. The yield of oats was increased 8 bu., wheat 10 bu. and hay, 760 lb. per acre.

When this fertilizer was added to a new legume-grass seeding after wheat, the yield of corn went up 12 bu., oats increased 7 bu., wheat 6, and hay 1,800 lb. per acre.

FERTILIZER RETURN: \$11.55 FOR \$1

In the 58 cotton fertilizer demonstrations conducted in Oklahoma in 1953, fertilizer increased the yield an average of 154 lb. lint cotton per acre, when insects were effectively controlled, according to Oklahoma A & M College. At 30¢ lb., the value of the increase was \$46.20 per acre.



Charlie Calcium, a very pleasant fellow, came into the extension office the other day and I asked him, "How did you make it last year?" He said, "Oh, very well, I reckon, I got a year's growth on five kids."

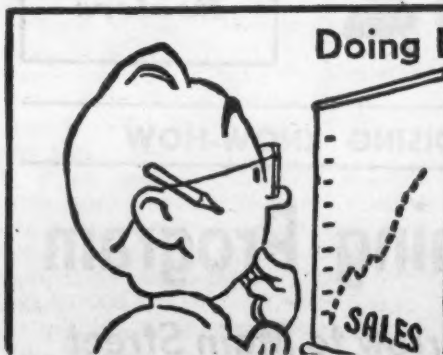
I asked one of our very best farmers, "What three things besides sunshine and water do our farmers need?" and to my surprise he answered, "Plenty of fertilizer, fishing worms and honeybees." On the beam, I thought. But we need them for more than fishing and satisfying a sweet tooth. Earthworms aerate the ground which creates a condition where rain water can be quickly absorbed instead of washing the soil away.

Bees perform a miracle almost in the pollination of many agricultural crops for the production of seed and fruit.

I was in a dealer's place of business the other day and he asked me for suggestions as to how he could better serve his customers. I suggested that he get farm signs—name and everything painted on metal at something close to cost—for those farmers that had named their farms.

Many of our dealers already have their ammunition ready for the grasshopper, bean beetle, spittle bug, armyworm, and what have you.

This increased income was obtained at a cost of only \$4 per acre for the fertilizer, leaving a net profit of \$42.20 per acre, or a return of \$11.55 for each \$1 invested in fertilizer. The income varied from nothing to as high as 396 lb. per acre.



Doing Business With

Oscar & Pat



Both Oscar and Pat were at their desks early one spring morning when the telephone rang. Pat looked at Oscar, and Oscar, busy with his figures, looked at Pat, and so Pat answered.

It seemed that a fertilizer customer was on the phone, either inquiring about an order or actually placing an order — Oscar couldn't quite figure out. He was busy with discounts and budget sheets, and was trying to continue this work and still listen to what Pat was saying. This was a difficult thing for Oscar to do, so he just stopped, pencil poised on paper and he just listened.

"Okay, Mr. Bulenberg," Pat said quite excitedly. "We'll send out that fertilizer this afternoon and tomorrow. Yes . . . we know it's late in the planting season. We'll do all we can to get the material to you quickly . . ."

Then he turned to Oscar. "Just think, Oscar, an order for \$1,150 worth of fertilizer. How's that for starting the day right, begorra?"

Oscar was not nearly so enthusiastic as his partner. His expression, in fact, was quite cold. "Who ordered it?" he asked.

"A new farmer named Herman Bulenberg. He bought out Emil Lauterbach on Rt. 3, and he is anxious to fertilize according to his own ideas and plant lots of corn. I promised him we'd get the fertilizer out quick. I'll have the boys start loading up right away."

"Wait a minute," Oscar called. "When is this man Bulenberg going to pay for this fertilizer?"

"Well," admitted Pat, "I really didn't ask him. He wouldn't call for fertilizer if he didn't intend to pay for it, would he? He asked about the discount we were offering. That shows he's a shrewd buyer. Besides, if he bought out Emil Lauterbach, then he has bought a farm which is worth at least \$40,000 with stock and machinery."

"That don't mean anything," Oscar said. "Maybe he only paid a little down on the farm and has a big mortgage. Maybe he owes money to somebody on a car, or something else. Maybe he's a spender. Maybe he can't save anything—like some other people in this town. Just because he bought Emil Lauterbach's farm — that don't mean nothing to me."

"So that's the way you look at it," said Pat finally. "And I suppose that's the way a credit man must look at it. But, Oscar, we really have a low credit loss the last five years, haven't we? Eventually we collect our money."

"Sure, we have," Oscar said bitterly, "but it took ten years off my life, keeping after you day after day, week after week to go out and get that money they owe us. It does no good to sell stuff if you have to wait and wait for your money. Then you have to borrow money from the bank to carry on. And collection expense is so high."

"The way you talk we might as well close up our business, lay down and die," Pat said gloomily. "It would be a way out." Oscar's lips tightened.

"I have thought of that many a time, Pat. Believe me, I have."

"But you're so discouraging," Pat insisted. "I work hard to make a sale and then you try to kill the sale by talking nothing but credit and gloom all the time."

Oscar snorted. "I got money invested in this business, the same as you. I worked hard for my money. If you want to throw yours away—that's your affair. But I do not want to throw mine away. I want to keep it and add to it."

"But we can't do business for cash only," Pat said. "The world is on credit nowadays."

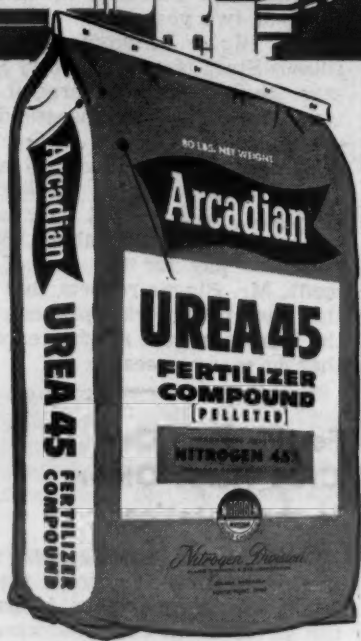
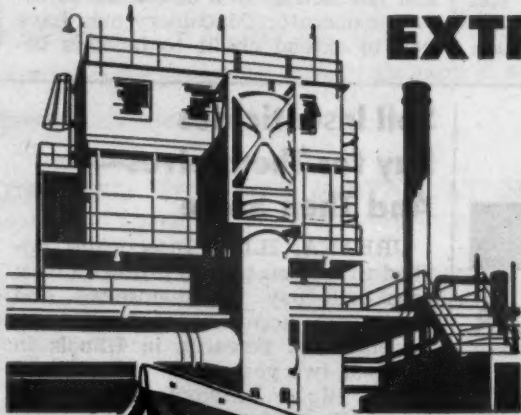
"Is that a compliment?" Oscar sneered. "Take a look at the way the world is."

"Well," said Pat practically. "What are we going to do about this order? How are we going to handle it?"

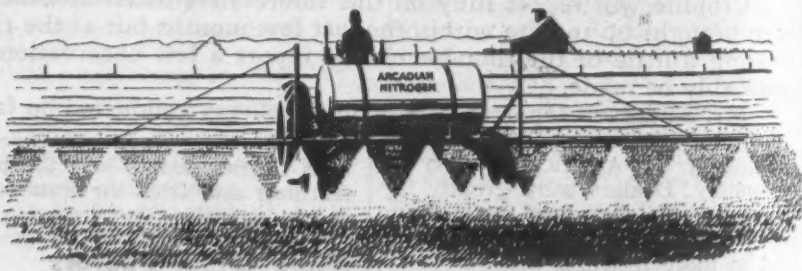
Oscar frowned. "Well, we will hold up the order until I have time to talk to the banker—not you—me. Then I will telephone my pastor and find out if he knows the Bulenbergs where they came from, and their family history. My wife Minnie knows a second cousin of the Lauterbachs. I will get her to see the Lauterbachs and find out why they sold, how many

ARCADIAN[®] *is making fer*

SELL THIS MODERN ARCADIAN LINE FOR EXTRA BIG-PROFIT BUSINESS!



New fertilizers and new equipment today are saving more work and making more money for farmers—and dealers—than ever before. The ferment in the fertilizer business is just getting underway, with big, new plants, with labor-saving machinery and new methods of feeding crops with modern, value-packed fertilizers. Nitrogen Division, long-time leader in fixing nitrogen from the air for fertilizer, is expanding new plants built as recently as last year. This leader in the fertilizer field is producing concentrated new products along with older ones to make farming a better paying business. As an ARCADIAN supplier to farmers, you can make good money on this constantly expanding fertilizer and equipment service to farmers. Sell the "hot" line—sell ARCADIAN!



The "45" that's packed with growing power, ARCADIAN UREA 45 is a natural fast-seller for modern farming. This 45% Nitrogen Urea Fertilizer contains the most concentrated dry nitrogen available, makes a good payload for you and the farmer. Every 100 pounds supplies 45 pounds of nitrogen, quickly available, long-lasting and leach-resistant. Ideal for ground, airplane or irrigation water application. Non-explosive, no hazard or insurance problem in storage.

The modern balanced fertilizer for modern, high-yield crops. ARCADIAN 12-12-12 is a money maker for dealer and farmer alike. Every firm, dry, non-dusting granule is a complete plant food, rich in nitrogen, phosphorus and potash, also contains sulphur, calcium and other elements. Stores well, spreads easily, feeds crops fast. High plant food content makes more money for you every ton you handle—and farmer response to this grand new product builds tonnage fast!

MORE MONEY FOR LESS WORK

ARCADIAN products take much of the backbreak out of fertilizer handling and give you a corresponding profit break too. For details on these modern, money-making products, fill in the coupon today.

ny got down a
bergs are a
"But that will
ake all those
tested. "I to
uld get a load
in this afterno
"Let's not wor
oned Oscar. "
our mon
y. I will wor
e banker righ
Oscar grabbe
the door.
"If his credit
gure on delive
me, is that it?
Oscar shook
of it at one t
end out a load
along with a
can give Bul
that our pri

Newest of
ARCADIAN
bags to lift,
Solutions sa
pressure an
and chisel t
sell or rent
acres a day,
of fertilizer

Low-pro
NITRANA®
acting nitr
nitrogen p
profitable s
URASOL*
ammonia f
summer ap

Non-pr
URAN* 3
ideal for r
with dribb
FERAN* 1
grains, wi
Best Soda
Soda is th
crystals o
Nitrogen
20.5% N
Free-flow

FILL

☐ 5
☐ 6
☐ 7
☐ 8
Nit
☐
☐

...got down and if they think the
...are any good."
"But that will take a long time to
...all those investigations," Pat
...tested. "I told him I thought we
...get a load of fertilizer out to
...this afternoon."
"Let's not worry about him," cau-
...Oscar. "Let's worry instead
...our money. It's early in the
...y. I will work fast. I'll go talk to
...the banker right now."
Oscar grabbed his hat and started
...the door.
"If his credit is good, then we can
...ure on delivering the fertilizer on
...me, is that it?" Pat inquired.
Oscar shook his head. "Not all
...it at one time," he said. "We'll
...end out a load of about \$250 worth,
...along with an invoice. The driver
...can give Bulenberg the bill, say
...that our prices are cash on de-

livery—otherwise no discount. If he
stalls on this deal, then we know
that's all the fertilizer he gets be-
fore he pays in full."

As methodical, money-wise Oscar
padded down the street toward the
bank, Pat said, "I wonder if he even
trusts God."

"Oh, Mr. Pat," reprimanded Tillie
Mason gently. "Maybe he is extra
cautious, but you don't want to lose
\$1,100, or wait a very long time to
collect it, do you?"

"No, I guess I wouldn't," Pat re-
plied. "Only I don't think everybody
is out to rook me, like Oscar feels.
I feel that some folks are honest
anyway—we collect all our money on
time except 2%. Even Oscar admits
that."

"But that 2% can ruin a business,"
said Tillie, "especially when they

cause a lot of collection expense be-
sides." Her smile was gentle, "Selling
isn't all there is to running a business
—but it's very important."

"I suppose so," Pat said resignedly.
"Maybe, with a watchdog like Oscar
around I'm lucky I get so many of
my ideas through."

"I'm glad you do," Tillie said diplo-
matically. "But Oscar is sure waiting
to weed out the poor ones."

At this sally they both laughed up-
roariously, until the tears streamed
down their cheeks.

New Kansas Firm

LAWRENCE, KANSAS — Erhart
Spraying Service, Inc., has been in-
corporated here by Delbert E. Er-
hart and June E. Erhart, both of
Lawrence, and M. D. Ruehlen of
Larned.

Ohio Retailer Pushes High Analysis Goods

Farmers in the Portsmouth, Ohio,
area are using higher analysis fertiliz-
ers, due largely to the recommenda-
tions of the state Department of Ag-
riculture and other agencies, reports
Harry Kempton, manager of the Sci-
oto Farm Bureau. His firm is doing
all it can to show farmers that bet-
ter fertilization is decidedly wise.

As an example of the variance of
fertilizers used by farmers on the
same crop, Mr. Kempton states that
his firm is selling 5-10-10 and 8-16-16
for corn, with many farmers taking
to the higher analysis. On wheat the
firm sells 3-12-12 and 5-20-20, while
on tobacco, it sells 4-12-8 and 5-10-15.

"I think this shows that many
farmers are turning to higher
analysis fertilizers when conditions
warrant," Mr. Kempton states.
This means they are studying rec-
ommendations of state and other
authorities more closely and are
willing to go along with these rec-
ommendations. Farmers who get
bigger yields from using a higher
analysis usually make no bones
about telling their friends about it,
thus the success story spreads.

This company which is part of the
Ohio State Farm Bureau organiza-
tion stages many fertilizer and feed
educational meetings in the area.
These are very well attended, accord-
ing to Mr. Kempton, with farmers
anxious to learn more about these
products. Lower farm prices on many
products are influencing farmers to
seek out every means by which they
can lower farm costs and produce
more for every dollar spent.

In order to get farmers to buy fer-
tilizer early for both spring and fall
use, this bureau gives discounts up to
6%. This stimulates early buying and
stocking of fertilizer.

Weed killers sell well in this area
to farmers, gardeners and county
spray crews. The store has a sizable
stock of such items, and also insecti-
cides, on wall shelves and islands,
along with a big display of hand
sprayers. Seasonally these materials
sell well.

"People have read a lot of adver-
tising material on the new insecti-
cides," states Mr. Kempton, "and
they are interested in hearing more
about them. We try to keep up with
trends and look forward to a good
business in insecticides and related
products during 1955."

To help get the sales story to the
trade, Mr. Kempton likes newspaper
and direct mail advertising which he
says is very effective for his company.

More Evidence That Brush Control Pays

HEBBRONVILLE, TEXAS — More
evidence that brush control pays:

The Benavides brothers, Jim Hogg
County, Texas, ranchers, recently
sold 43 calves for \$92.93 a head. The
calves had been raised on pasture
where a brush control project was
begun six years ago.

Fifteen calves on a neighboring
ranch were shipped to market about
the same time. These calves, raised
in brushy pastures, sold for \$72.80
per head.

In addition to increased profits,
the Benavides brothers did not buy
supplemental feeds during the winter,
reports Travis A. King, county agent.
The neighbor's calves were creep fed
for 40 days and the cows required
15 to 20 lb. hay each day.

Calves from both pastures were the
same age and breed, and the pastures
contained about the same type veg-
etation, says Mr. King.

Fertilizer History...



Newest of the new and growing fast in popularity too, are
ARCADIAN Nitrogen Solutions for direct application to the soil. No
bags to lift, no dust, no high-pressure fumes. ARCADIAN Nitrogen
Solutions save work for you and the farmer because tanks, pumps, air
pressure and gravity do the hard work. Tanks, booms, dribble tubes
and chisel teeth are the simple field equipment for the farm. You can
sell or rent equipment to spread ARCADIAN Solutions on 80 to 200
acres a day, and make this extra profit besides handling the big volume
of fertilizer in fast-moving ARCADIAN Solutions.

Low-pressure Solutions

NITRANA® Solutions contain 37 to 41% nitrogen, including quick-
acting nitrate and long-lasting ammonia forms. Extremely low-cost
nitrogen per pound. Side-dressing equipment for NITRANA is a
profitable side-line.

URASOL® Solutions contain 33.5% nitrogen in desirable urea and
ammonia forms. Adapted to cold weather storage and use as well as
summer application.

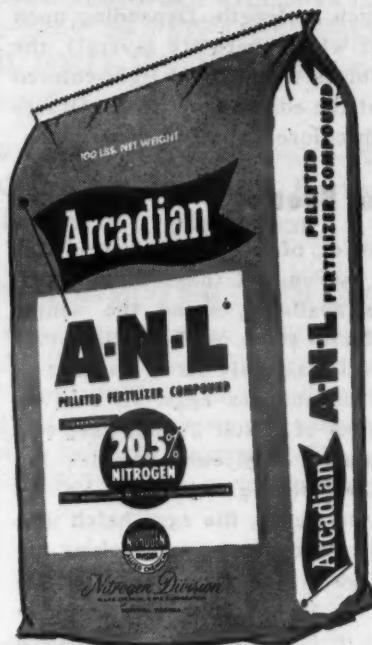
Non-pressure Solutions

URAN® 32% Solution contains both urea and ammonia nitrogen, is
ideal for rapid spray application on plowland, can also be applied fast
with dribble tubes or in irrigation water.

FERAN® 16% and 21% Nitrogen Solutions are ideal for fruit, pastures,
grains, with their combination of nitrate and ammonia nitrogen.

Best Soda made — new-process ARCADIAN American Nitrate of
Soda is the favorite top-dresser in big, new, fast-spreading, free-flowing
crystals of 16% nitrate nitrogen with 26% sodium content.

Nitrogen plus calcium and magnesium makes ARCADIAN A-N-L®
20.5% Nitrogen Fertilizer a popular product especially on acid soils.
Free-flowing pellets contain nitrate and ammonia nitrogen.



FILL IN AND MAIL THIS COUPON NOW!

- ☐ UREA 45 Fertilizer
45% Nitrogen Pellets
- ☐ 12-12-12 Fertilizer
Granular
- ☐ American Nitrate of Soda
Improved Granular
- ☐ A-N-L® Nitrogen Fertilizer
Pelleted
- Nitrogen Solutions**
- ☐ Non-pressure
URAN® and FERAN®
- ☐ Low-pressure
NITRANA® and URASOL®
- *Trade-Mark

NITROGEN DIVISION Allied Chemical & Dye Corporation
40 Rector St., New York 6, N. Y.

Please provide me full information on the products I have
checked at the left.

☐ Please have an ARCADIAN salesman call on me.

NAME _____

FIRM _____

ADDRESS _____

CITY _____

STATE _____



BUG OF THE WEEK

Mr. Dealer Cut out this page for your bulletin board

Blister Beetle



How to Identify

Blister beetles are relatively large, measuring up to a full inch in length. Depending upon the species (of which there are several), the insect may be black with narrow light-colored stripes on or at the edge of the wings. Others may be grayish colored, spotted or striped.

Habits of Blister Beetle

The life histories of all species of blister beetle are not known, but those about which information is available, spend the winter months in the larval stage. While in the larval stage, some species actually serve mankind as destroyers of grasshopper eggs. In a given year, some species of blister beetles have two generations, others only one. Females lay their eggs in the soil in groups up to 100. In ten days to three weeks, the eggs hatch into larvae which dig through the soil looking for grasshopper eggs which they eat. The development of the insect from this stage is complicated. It molts four times, undergoing entirely different changes, emerging at last as an adult which attacks many varieties of plants.

Damage Done by Blister Beetles

Being widely distributed throughout the U.S., the blister beetle feeds on a number of crops including both field and garden areas. Alfalfa, clover, soybeans, and garden plants are all on the list for damage by this pest. Plant growth is stunted in many cases, and yields reduced. On the human side, the beetle, if crushed on the skin, will cause blisters to arise on the spot, hence its name.

Control of Insect

When crops of considerable value are infested with blister beetle, a mixture of 25% cryolite and 3% to 5% DDT is an effective measure for control. The DDT may be substituted by 75% dusting gypsum, with good results. These insects are not easy to control with arsenicals, since they appear to be resistant to these insecticides. The beetles are also repelled by the presence of bordeaux mixture on plants. In small gardens, it is possible to knock off the beetles by hand into kerosene, which kills them.

Illustration of blister beetle furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

of 50 bu. corn
acre.
Mr. Turner n
lish his ends
University of Il
liberal minded
ad, Dr. Jerry L
Dr. Lyons stres
oil tith and
amounts of nitr
sh and lime
the plant food v
out of the soil
ast nearly 150

It was app
ers of Living
eager to do a
yields that w
to put money
end of the y
could see tha
the limiting f

Thus, Dr. I
eamed up to
They realized
overcome incl
weeds, cutwor
ear worms an
as the neces
fertility. So a
was launched
about.

One of the
ermine how m
ers were in t
year. The me
cover that les
being spent t
that had bee
crops. Just h
method, is se
\$15 to \$25 v
being sold o
acre, each se

The next
vincing the
investments
worth while
other than t
and thinkin
Mr. Turner
help of a fe
sons, set o
ston County
tion of farm

These pro
eaders were
help. College
g teachers
prompt to o
organization
was formed
and the pla
County corn

A program
County Pac
the lot of fa
like, was
business m
and the valu
ngston Cou
difficult for
realize that
o 50 or m
acre, would
more per ac
res.

Farmers
hat if the
ould realiz
or more a
income of
wealth in a
better prog
These me
ow the l
ust what t
early one
quickly.

Commit
each of th
county. T
farmers v
were to be
new move
Pontiac w
room and
Lyons the

ILLINOIS DEALER

(Continued from page 9)

of 50 bu. corn and 30 bu. oats per acre.

Mr. Turner needed help to accomplish his ends so he went to the University of Illinois where he found a liberal minded college-trained farm advisor, Dr. Jerry Lyons, a young teacher. Dr. Lyons stressed the importance of soil tilth and pointed out that large amounts of nitrogen, phosphorus, potash and lime are needed to replace the plant food which has been cropped out of the soil and sold during the past nearly 150 years.

It was apparent that the farmers of Livingston County were eager to do a better job and obtain yields that would make it possible to put money in the bank at the end of the year. Yet, Dr. Lyons could see that the low yields were the limiting factor.

Thus, Dr. Lyons and Mr. Turner teamed up to correct this situation. They realized that the obstacles to be overcome included competition from weeds, cutworms, corn borers, corn ear worms and other pests, as well as the necessity of improving soil fertility. So an educational campaign was launched to bring these things about.

One of the first things was to determine how much fertilizer the farmers were in the habit of using each year. The men were appalled to discover that less than \$10 an acre was being spent to replace the minerals that had been removed by previous crops. Just how inadequate was this method, is seen in the fact that from \$15 to \$25 worth of minerals were being sold off the farm from each acre, each season!

The next step was one of convincing the farmers that larger investments in plant food would be worth while. With no objective other than to challenge the interest and thinking of thousands of men, Mr. Turner and Dr. Lyons, with the help of a few other interested persons, set out to bring the Livingston County situation to the attention of farmers and business men.

These professional men and farm leaders were quick to pitch in and help. College men, farm advisors, vocational teachers and the press were all prompt to offer their assistance. An organization with a few simple rules was formed by committee members and the plan to improve Livingston County corn production was launched.

A program called the Livingston County Pacemaker Club, to improve the lot of farmers and business men alike, was thus gotten underway. Business men saw the possibilities and the value of mobilizing 2,500 Livingston County farmers. It was not difficult for these business men to realize that an increase of from 15 to 50 or more bushels of corn per acre, would amount to \$25 to \$75 more per acre on the county's 250,000 acres.

Farmers keen in production, figured that if the job could be done, they could realize perhaps \$3,000 to \$6,000 more a year and an added extra income of possibly \$100,000 of new wealth in a lifetime, by following the better programs and practices.

These men caught on fast. Somehow the Pacemaker program was just what they had been wanting and nearly one hundred men joined up quickly.

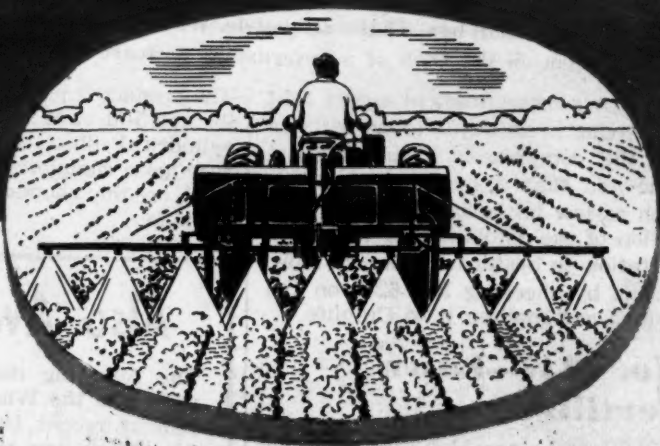
Committeemen were chosen in each of the 23 communities in the county. These men were to help farmers whose fields and farms were to become laboratories in this new movement. The Moose Hall in Pontiac was chosen for the class room and Mr. Turner and Dr. Lyons the teachers. There were no

(Continued on page 16)

MR. DEALER

Your Customers Need

WEED KILLERS!



You Can Sell Them

Thompson-Hayward DED-WEED
with Confidence, because...

You know that DED-WEED represents the latest advance in agricultural chemistry. Every DED-WEED product is farm-tested...of proven effectiveness...economical to buy...and easy to use.

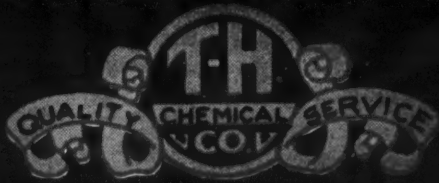
Whether a customer wants to control weeds in field or pasture, there is a Thompson-Hayward DED-WEED formulated for his specific need. Sell DED-WEED for troublesome weeds. Sell DED-WEED for woody growth and hard-to-kill weeds.

Stock up now on the formulations of Thompson-Hayward DED-WEED, needed in your locality. Be ready to meet the demand that is bound to come soon.

Our Local Staff Can Help You and Your Customers Thompson-Hayward maintains warehouses of our own and sales offices in 18 different cities. The Thompson-Hayward headquarters nearest you is staffed with men who know your particular local conditions and what products will serve your customers best. Don't hesitate to call the Thompson-Hayward office nearest you at any time for advice on any agricultural chemical problem.

THOMPSON-HAYWARD

CHEMICAL COMPANY



KANSAS CITY, MISSOURI



**Faithfully
Serving
Agriculture
for More
Than
37 Years**



**THE
COMPLETE LINE
OF
THOMPSON-HAYWARD
AGRICULTURAL
CHEMICAL
PRODUCTS**

Includes...

INSECTICIDES FOR CROPS

Dieldrin Spray WE-15
Aldrin WE-25
Heptachlor E-2
Tri-6 (BHC)
Ded Tox (DDT Products)
Phosfume (Parathion Products)
Toxichlor (Chlordane Products)
Phenacide (Toxaphene)

FLY SPRAYS

Dairy Cattle Spray
Methoxychlor
Malathion
Lindex (Lindane Products)
Pyrtox (Pyrethrin Products for Dairy Cattle and Food Processing Plants)

WOOD PRESERVATIVES

(Containing Penta)
Termi-trol
Permagard

GRAIN FUMIGANTS

Fumigas
Weevil Kill

DISINFECTANTS

Animal Dip (Coal Tar)
Septigard

RODENTICIDES

(Warfarin Products)
Rat-Trol (Bait and Concentrate)

CRUDE DRUGS

VITA-RICH FEED FORTIFIERS

MIN-RICH TRACE MINERALS

POULTRY AND HATCHERY SUPPLIES

SEED DISINFECTANTS AND INOCULATORS

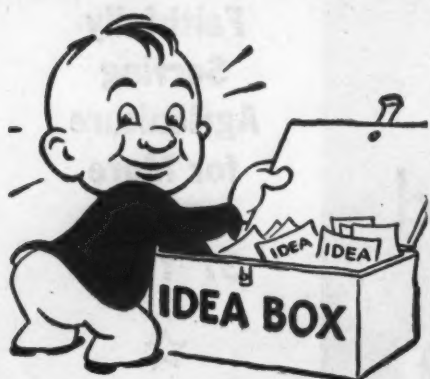
18 SALES OFFICES AND WAREHOUSES OF OUR OWN



TO GIVE YOU COMPLETE, FAST SERVICE

Better Selling

Richer Sales Fields for Dealers



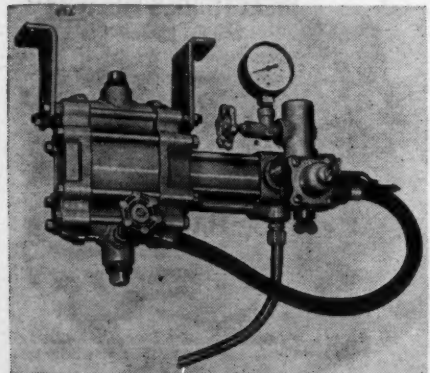
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6246—Transfer Pump

A new pump for fast transfer of anhydrous ammonia has been announced by the John Blue Co. The pump starts and stops with a twist of a valve, according to a company announcement. It uses a small quan-



tity of ammonia vapor to drive the transfer pump, thereby reducing loss. Flow rates of 20 gal. per minute or more may be obtained with a loss of three-tenths of 1%, it is claimed. This means that a 100-gal. tank may be filled to 80% in 5 min. The pump is easily installed and weighs 27 lb.

The firm's announcement states that the saving in ammonia alone will pay for the compressor within a short time and that it has other features such as low initial investment, elimination of the defoliation of crops and irritation to bystanders. Secure more details by checking No. 6246 on the coupon and mailing it to Croplife.

No. 6247—Lawn Fertilizer

Plantrons, a new high-analysis, soluble fertilizer in bead form for home lawns and gardens is being test marketed in the San Diego, Kansas City, Cleveland, Columbus, and Springfield, Mass., areas by Forward House, Inc., a division of Olin Mathieson Chemical Corp. Patterned after the high analysis pelletized commercial fertilizers produced by Olin Mathieson, Plantrons has a basic formula of 12% nitrogen, 24% phosphorus and 12% potassium. It also contains 0.1% each of iron, copper and zinc, plus chelating agents to solubilize these elements and make them immediately available to plants. The product is completely soluble and thus can be applied either dry or in solution. It has a green color and mint odor.

The product is packaged in 4-oz., 1½-lb., and 5-lb. cans and 10-lb. and 25-lb. cylindrical fiber containers. To secure more complete details check No. 6247 on the coupon and mail it to Croplife.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted here to help keep retail dealers on rotational circulation informed of new industry products, literature and services.

No. 5111—Bait, Dispenser

A new liquid bait for rodents and a bait dispenser now are being marketed by Donco, Inc., manufacturer of insecticides and rodenticides. Donco's water soluble rat and mouse killer, containing Pivalyn, is claimed



to be a tasty solution to rodents that is much more acceptable than plain water. One 1½ oz. package is mixed with a quart of water and poured into the liquid bait dispenser (see photo). To purchase a supply or for further information check No. 5111 on the coupon and mail it to this newspaper.

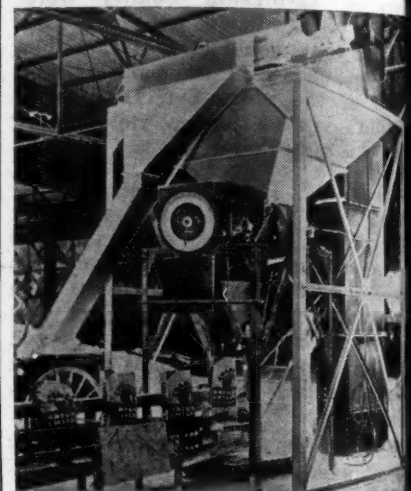
No. 6224—Tomato Product

Science Products Co. is now manufacturing its product, Blossom-Set, in aerosol bomb packing. It will continue to be available in bottles, company officials said. The product, according to a company announcement, is a tomato hormone which "makes tomato flowers set fruit even when cold nights or hot, dry weather prevails." The aerosol can is a 12-oz. size which contains a season's supply for about 100 tomato plants. Jobbers, wholesalers and dealers may check No. 6224 on the coupon, clip

and mail it to this newspaper to obtain complete information about wholesale and retail prices and merchandising information.

No. 5099—Bagging Machine

Union Bag & Paper Corp., sales agent for Inglett & Corley's new I & C bagger (model UB-101) has announced that the machine is ready for distribution. The machine works in conjunction with a moving conveyor and sewing head. The weighing and filling cycle is automatic.



starter button automatically permits delivery of the pre-weighed material through the machine's bag chute in an endless series. The filled weight drops each of the open mouth multi-wall bags onto a moving conveyor belt which leads them through the sewing head. A dial type scale and filling operators can see it. The model will weigh units from 25 to 200 lb. A system of switches within reach of the bagging operator enables him to change weight units immediately by operating the switch covering the desired unit. To secure more complete details check No. 5099 on the coupon and drop it in the mail.

No. 6238—Lawn Booklet

A new booklet entitled, "How to Kill Lawn Insects with Dieldrin," has been prepared by the Shell Chemical Corp. Illustrated in four colors, the 12-page booklet contains a wide variety of information about turf killing bugs and how to treat them with various dieldrin formulations. Protection of ornamentals is covered in the new booklet and there is a special section on application of dieldrin for control of household insects. A copy may be obtained by checking No. 6238 on the coupon and dropping it in the mail.

No. 6237—Space Fumigant

A new space fumigant, "Bromotox," has been introduced by American Potash & Chemical Corp. The new product is a mixture of ethylene dibromide and methyl bromide, both of which have been used in the past to fumigate storage houses. Control of pests in grain, flour, rice, cheese and dried fruits is claimed for the product. More complete details will be sent if you will check No. 6237 on the coupon, clip and mail it.

No. 6239—Fly Killer

Ortho fly killer dry bait is the name of a new product that is said to kill both resistant and non-resistant house flies economically and safely, according to its manufacturer, California Spray-Chemical Corp., which has brought it out as a companion product to its liquid bait, Ortho fly killer M. The dry bait product utilizes the particle size ba-

Send me information on the items marked:

- | | |
|-----------------------------------------------------|---------------------------------------------------|
| <input type="checkbox"/> No. 5099—Bag Machine | <input type="checkbox"/> No. 6235—Weed Guide |
| <input type="checkbox"/> No. 5111—Bait Dispenser | <input type="checkbox"/> No. 6237—Space Fumigant |
| <input type="checkbox"/> No. 6223—Vermiculite | <input type="checkbox"/> No. 6238—Lawn Booklet |
| <input type="checkbox"/> No. 6224—Tomato Product | <input type="checkbox"/> No. 6239—Fly Killer |
| <input type="checkbox"/> No. 6231—Liquid Fertilizer | <input type="checkbox"/> No. 6240—Applicator |
| <input type="checkbox"/> No. 6232—Pump | <input type="checkbox"/> No. 6246—Transfer Pump |
| <input type="checkbox"/> No. 6233—Herbicide | <input type="checkbox"/> No. 6247—Lawn Fertilizer |

NAME

COMPANY

ADDRESS

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9,
P. L. & R.)
MINNEAPOLIS,
MINN.

BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept.

Minneapolis 1, Minn.

Better Selling

Richer Sales Fields for Dealers

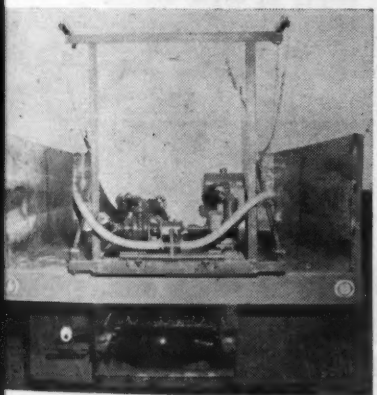
its malathion formulation. A Cal-
ay spokesman said: "A study of
feeding habits revealed that the
ects like to pick up particles of a
relative to the size of a football
man. They can't eat a particle of
size, any more than a man could
allow a football. A single particle,
therefore, may serve as a final meal
a number of flies." No mixing is
necessary. Available in 1-lb., 5-lb. and
lb. sizes, the product is claimed to
ist caking. More complete details
available. Check No. 6239 on the
upon, clip and mail it to this news-
per.

No. 6231—Liquid Fertilizers

Liquid fertilizer formulators, dis-
tributors and dealers, as well as sup-
pliers, will find a new booklet, "Preparation of Liquid Fertilizers," prepared by the Victor Chemical Works of interest. In eight pages the booklet describes the preparation of solutions, the batch procedure, and a chart showing the proportions of chemicals used to prepare liquid fertilizers to various strengths. The booklet also lists in detail the equipment recommended for a plant capable of producing five to 10 tons an hour of liquid fertilizer, tells the cost, and gives a flow diagram of a plant for the preparation of liquid fertilizers. The booklet may be obtained by checking No. 6231 on the coupon and mailing it.

No. 6240—Fertilizer Applicator

Wayward Fertilizer Co. is producing a new, complete analysis liquid fertilizer applicator which has a capacity of 500 gal. The unit is complete, ready for placing on the cus-



mer's truck for immediate use. The applicator has a stainless steel boom and pump. One round in the field, covering 1/4 mile will fertilize two acres. For more complete details by checking No. 6240 on the coupon and mailing it to this newspaper.

No. 6235—Weed Control Guide

The Cooperative G.L.F. Exchange, Inc., has issued its chemical Weed Control Guide for 1955. Included in the 56-page booklet are chemical weed controls for the dairyman, cash crop and vegetable grower, farm and fruit grower, based on the most recent recommended practices. The guide also suggests control measures which may be used on a trial basis only. Specific controls of prob-
lems in field and garden crops are given. Aquatic weed control, soil sterilization and instructions in the use of weed killers and equipment are included. To obtain a copy check No. 6235 on the coupon and drop it in the mail.

No. 6223—Vermiculite

Over 40 industrial applications of vermiculite are listed in the 1955 edition of a data book on the mineral's chemical and physical proper-

ties announced by the Zonolite Co. The book has been brought up to date to familiarize researchers with latest research findings and practical uses of vermiculite. A selected bibliography is included for the first time, along with a list of vermiculite publications. Copies of the 16-page data book are available by checking No. 6223 on the coupon and dropping it in the mail.

No. 6232—Pump

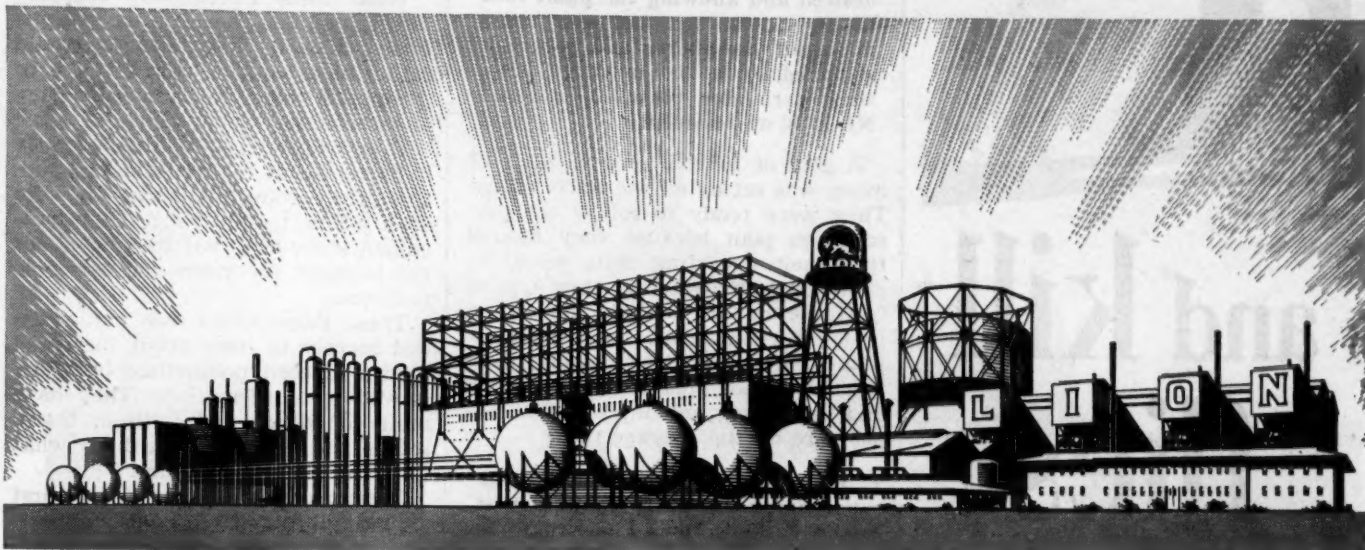
Hypro Engineering, Inc., is manufacturing a sprayer pump, called model 150, designed for such agricultural applications as high volume spraying and rapid transfer of liquid fertilizer. Capacity of the pump is over 30 gal. per minute at tractor power take-off speed (500 r.p.m.) and it has a flow

rate of over 65 gal. per minute at its maximum recommended speed of 1,100 r.p.m. Highest suggested pressure limit is 150 lb. per square inch. Case and rotor of the pump are available in cast iron or a nickel-iron alloy. Rollers are of resilient nylon for positive liquid displacement. The pump is self-priming and is equipped with permanently lubricated ball bearings. Check No. 6232 on the coupon, mail it and more complete details will be sent to you.

No. 6233—Herbicide

Baron, a nonselective herbicide, is now available for industrial use, the Dow Chemical Co. announces. The new product is a liquid which emulsifies readily in water. Active material

in Baron is 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate. For convenience this chemical has been given the coined common name erbon. It is said to embody a new chemical characteristic as the basis for its effectiveness. Baron contains 4 lb. of technical erbon per gallon. Baron may be sprayed on leaves, which take it up directly; or it may be sprayed on the soil, from which it is taken up by roots. Its translocation from leaves is relatively independent of rainfall moisture. It is claimed that when it is applied to the soil it acts as a residual sterilant, lasting for approximately a season, its effective persistence depending upon various factors. Secure more complete details by merely checking No. 6233 and mailing the coupon.



How LION Helps YOU Sell NITROGEN FERTILIZERS

- ✓ Two Giant Chemical Plants Assure the Supply
- ✓ Advertising Helps Create the Demand

As a retailer, you'll find it to your advantage to sell Lion nitrogen fertilizers, because Lion's manufacturing capacity and storage facilities assure a ready supply of top-quality materials, and Lion's consistent advertising pre-sells the Lion brand.

Capacity? Lion's two giant chemical plants are now in production, making Lion a leader in manufacturing the most popular and economical types of nitrogen fertilizers not only in the South but nation-wide.

Delivery? Lion has constructed huge storage facilities to accumulate enormous stocks of the various nitrogen fertilizer materials. Even when demand is intense, you can get Lion nitrogen products.

Pre-selling? Lion's continuous advertising does an effective pre-selling job for you with your farmer customers. See list below.

Feature and sell nitrogen fertilizers with the Lion emblem on the bag, or Lion's anhydrous ammonia. You'll make sales easier, which means more profit for you.

Look To LION—A Leader In Petro-Chemicals—For Nitrogen Fertilizers

- Lion Anhydrous Ammonia • Lion Ammonium Nitrate Fertilizer
- Lion Aqua Ammonia • Lion Nitrogen Fertilizer Solutions
- Lion Sulphate of Ammonia

LION FERTILIZER ADVERTISING REGULARLY APPEARS IN:

- Farm & Ranch—Southern Agriculturist
- Prairie Farmer
- Progressive Farmer
- Wallace's Farmer & Iowa Homestead
- Leading State Farm Publications

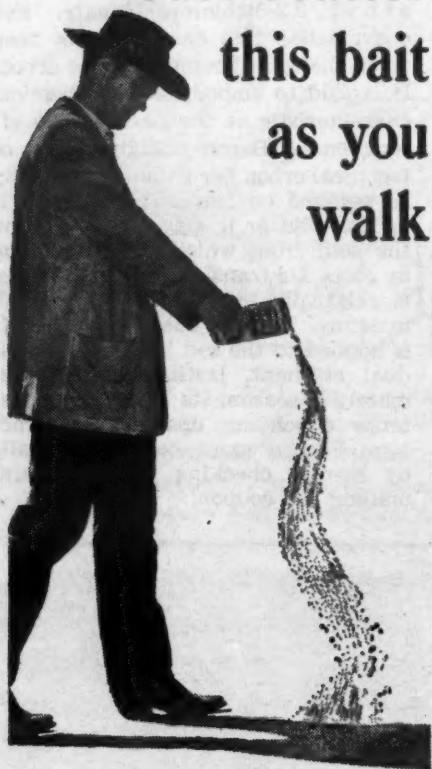
DISTRICT SALES OFFICES:
NATIONAL BANK OF COMMERCE BLDG., NEW ORLEANS, LOUISIANA
SHEPHERD BUILDING, MONTGOMERY, ALABAMA

LION OIL
CHEMICAL SALES DIVISION



COMPANY
EL DORADO, ARKANSAS

Just scatter
this bait
as you
walk



and kill
flies



A dry granule
bait—kills both
resistant and
non-resistant
house flies.

New, easiest way ever to
control house flies in and
around barns, poultry sheds,
out buildings, stables, gar-
bage disposal areas, drive-in
restaurants.

Simple as shaking salt—Open
the shaker can and scatter
lightly around fly feeding
areas.

Fast! You can bait several
hundred square feet in 2 or 3
minutes.

Effective! This attractive-type
bait lures flies, they feed and
die.

Low cost, too! One pound cov-
ers 2,000 square feet of fly
feeding areas.

Space spray gives
rapid knockdown

ORTHO Fly Spray is an ideal
space spray which gives quick
kill on contact and provides
excellent control of the lesser
house fly.

On all chemicals, read directions
and cautions before use.

World leader in
scientific pest control

ORTHO
SCIENTIFIC PEST CONTROL

T. M. REG. U. S. PAT. OFF. ORTHO
CALIFORNIA SPRAY-CHEMICAL Corp.
(Offices throughout U. S. A.)

ILLINOIS DEALER

(Continued from page 13)

books to buy, no fees, no tuition and no regulations. Farmers were invited to enroll and do everything possible to lower the cost of corn production and widen their profit margin.

Bankers, bakers, editors, dentists, merchants, elevator men, gas station operators and the 500 business men all teamed up to help. Soils were tested. Inventories were taken of the available supplies of plant food in the soil. Fertilizer prescriptions were written and plant food purchased in the amounts shown on the field prescriptions written by Dr. Ed Tyner, University of Illinois, and Dr. Jerry Lyons.

Applications were made in April immediately after the plans were launched. Farmers were told to figure how much corn per acre was desired and knowing the plant food supply in the soil and how much nitrogen, phosphorus and potash is removed by a 100 bu. corn crop, they were able to tell how much NP & K was needed.

A goal of 100 bu. corn an acre, or more, was set by all the Pacemakers. They were ready to follow the prescription plan because they figured that their operating costs would be about the same whether they applied fertilizer or not. (Costs for taxes, interest, rent, labor, machinery, insecticides, weedicides, plowing, discing, harrowing, planting, cultivating and harvesting amount to about \$43 per acre on the average.)

Figuring nitrogen at 15¢ a lb. and phosphorus at 9¢ and potash at about 6¢, these men knew that 100 bu. corn and stover would remove about 160 lb. nitrogen, 60 lb. phosphorus and 125 lb. potash or about \$36 worth of plant food per acre per year. The plan enabled these men to figure accurately how to put back a larger part of what they had been taking out each year and reap a better profit.

For a trial run in 1954, these Pacemakers bought and applied \$25.57 worth of fertilizer on the average for each acre. This plant food was in the form of mixed fertilizer as well as nitrogen, phosphorus and potash alone. Many Pacemakers used high analysis mixtures and also nitrogen solutions which saved time, labor and cost. Many men also had the chance for the first time in their lives to use high analysis granulated materials for plow down and for starter. Less bulk was handled in order to apply heavy applications and time was saved.

Mr. Turner and Dr. Lyons enlisted the help and support of farm leaders and educators for speaking programs the second Thursday of each month from April to November. An average attendance of more than 200 per meeting was registered. These were not captive audiences. There was no enrollment and men could leave if they wished; but none did.

All seats were occupied and standing room was at a premium at every meeting. Community tours were held in each of the 23 locations. Corn plots were inspected and appraised. The slogan "The Beaten Path is for the Beaten Man" was displayed on a banner 2 ft. by 24 ft. in the Moose Hall at every meeting.

Speakers at the monthly meetings included well qualified agronomists and farm advisers from the university, the government and private industry.

Having set out to learn thoroughly, these Pacemakers and their committee members learned more in 1954 than they had in any ten year period previously. They opened new vistas

for themselves and blazed new trails in corn production in the heart of the corn belt.

It did not take long for these farmers to put into practice the theories learned in their course. With an average expenditure of \$25.57 for fertilizer, corn yields soon reached about 110 bu. an acre for the Pacemakers. This yield, nearly 60 bu. above the county average, was welcome news for everyone, especially those who accomplished this feat. To them it meant greatly expanded profits.

With corn worth \$1.50 bu., this means about \$90 in new wealth for every \$25.57 spent for plant food... a return of nearly \$4 for every \$1 invested. This increase, obtained in only six months' time, May to October, made it all the more impressive.

What these Pacemakers did, any farmer can do. They hold no secrets. Business men and farmers would rather have benefits from better corn production than from a new industry in the county.

Everybody in Livingston County is happy about the Pacemakers' success. This group has learned how to do a job better by doing. They have gained know-how, but the end is not yet in sight for them nor for their partners.

These Pacemakers were not satisfied merely to hear about increased profits in corn production, but they proved it to themselves. They have built confidence and faith in themselves and they have faith in what they can do in the future.

Pacemakers speaking at the first annual fall roundup in Pontiac reported that the program is the most vital approach to a difficult problem. "The Pacemaker program is the most

profitable demonstration of what can be done in adult education," one member testified. "It will mean more money, more credit and a better living for everyone in Livingston County."

"The value of the program is in appreciation of its possibilities and its approach to the problem, rather than this year's results," another farmer Pacemaker observed.

The acceptance of the prescription program is evidenced by the fact that nearly 100 carloads of fertilizer have been purchased by these Pacemakers in the short period after harvest and before fall plow down time. Both granulated high analysis fertilizers and solutions were used by many Pacemakers for fall plow down in preparation for the 1955 corn crop. These methods have enabled the Pacemakers to reduce costs of corn production from \$1.35 bu. to less than 75¢ and with less work.

But Pacemakers, less than 1% of Livingston County farmers, obviously cannot do the total job alone. The program must roll fast if county and personal goals are to be reached. Information about the Pacemaker program is spreading widely, not only in Livingston County but to other corn producing counties in the U.S.A.

Pacemakers are not cajoled, begged, urged, nor pleaded with to "join up" or conform to regulations. Leading educators who have appraised the Pacemaker program have called it "the most outstanding and effective adult educational program in the nation."

This program is a bold step forward and if adopted by all Livingston County farmers and by others in the corn belt, the plan will have a tremendous impact for good on the welfare, the social, the economic, the educational and physical development of the nation.



ROOT DIGGING DAY—Shown above are Oklahoma FFA and 4-H club boys bagging new type Bermuda grass roots for starting their own nursery plots. The project site was the Grand River Chemical Division of Deere & Co. farm near Pryor, Okla.

FFA Members Hold "Root Digging Day" At Grand River Chemical Division Farm

PRYOR, OKLA.—FFA boys from 56 chapters in 16 Northwestern Oklahoma counties converged on the Grand River Chemical Division of Deere & Co. farm near Pryor, Okla., recently. The event was set up to dig and bag Midland Bermuda grass roots for replanting.

Each chapter took about ten bushels of roots or a total of 630 bu. 4-H club and county agents took about 120 bu. and the Soil Conservation Service another 100 bu.

The roots are being used for the establishment of nursery plots throughout the various counties in the area.

Midland Bermuda grass is gaining considerable interest in the Bermuda grass area of Oklahoma. This new strain is similar to Coastal Bermuda, but is more winter hardy. It is two to four times as productive as unselected common Bermuda on fertile

soils. Midland is palatable, has good disease resistance, and does not produce as many seed heads as most common types of Bermuda. It is a better companion crop for legumes than common type because it has fewer rootstocks.

There is only a limited supply of these roots available in the state, and consequently these roots demand a commercial value of \$3.60 to \$5.00. However, Deere & Co. furnished roots to FFA and 4-H club groups free of charge in an effort to help promote this new promising type Bermuda throughout the area.

Supervision of the project was conducted by Dr. W. L. Garman, Grand River Chemical Division agronomist. Marvin Best, vocational agriculture instructor at the Whitaker School, Pryor, and Howard Roy, FFA Conservation District.

PESTICIDE USE

(Continued from page 1)

ects and diseases—29 million acres. Probably not more than 3 million acres received both treatments.

The frequency of chemical use varies with purpose, with crop and with other conditions—one application per season for controlling weeds, nearly one for insects and diseases.

Potatoes get more treatments than any other crop—over five per season, nationally, but in Pennsylvania more than 11 treatments in 1952, on a total of 60,000 acres.

Farmers do most of their own spraying and dusting. Custom operators do 30% of it, nationally, but over half of it in the Mountain and Pacific Coast states. More than 80% of the total custom cost is for insect and disease control.

Chemical weed control is important in the Great Plains, the Corn Belt, and the Mountain and Pacific Coast areas. They use three-fourths of all the herbicides, mostly on small grains. Herbicides for small grains cost 66¢ an acre once over complete custom application, 1.84 an acre.

Chemical weed control is practiced on more than 9 million acres of corn (1% of the total), more than 2 million acres of pasture, and 2.6 million acres of other crops.

Nearly two thirds of all insect and disease control centers in the Cotton Belt—Oklahoma and Texas east to the Atlantic—and among the diverse crops of the Pacific Coast.

About 13 million acres of cotton—nearly half of the total acreage grown in 1952—were treated an average of three times to prevent insect damage. That cost was about \$64 million.

Some 3.5 million acres of fruits and nuts were sprayed or dusted an average of 4.5 times during the season to control insects and diseases. This cost \$63 million. Growers did 85% of this at a cost of \$3.20 an acre for materials only. They contracted for the remainder at about \$8.42 an acre, applied.

Insect and disease control chemicals were used on about 2¼ million acres of commercial vegetables, 1 million acres of potatoes, and 1½ million acres of tobacco (80% of the crop). Three million acres of alfalfa and clover were treated at a cost of nearly \$10 million.

Corn treatment ranged from 400,000 acres in 1952, a light borer year, to 2.5 million acres in 1949, a record year.

FARM ACT

(Continued from page 1)

ould restore the 90% of parity support, could tip the scales in the forthcoming referendum on wheat marketing quotas for the next crop.

This wheat marketing quota decision appears to swing in the balance now that the National Farmers Union and Farmers Union Grain Terminal Assn. have announced they intend to push for a favorable vote of the wheat farmers in Montana and the Dakotas.

However, with substantial farm groups deserting the high price support position, it is possible that these groups may not carry their ordinarily heavy influence. If the House rejects the high price support bill this week, it is probable that the wheat marketing referendum will be held.

BIG TOBACCO YIELD

LEXINGTON, KY.—Tobacco made average yield of 1,959 lb. an acre in Rockcastle County, Ky., last year.

American Chemical Paint Files Patent Suit

AMBLER, PA.—A suit for the infringement of U.S. Patent No. 2,258,292 has been filed by American Chemical Paint Co. against Thompson Chemical Corp. in the U.S. District Court for the Southern District of California, Central Division under Civil Action No. 17,987-C.

The product which the American Chemical Paint Co. asserts infringes upon the patent is sold by Thompson Chemical Corp. under the trademark Ana Amide.

TOP-DRESSING ADVISED

MANHATTAN, KANSAS — Top dressing small grainfields this spring with nitrogen fertilizers should be extremely profitable on many fields in north central and eastern Kansas, Dr. F. W. Smith, professor of agronomy at Kansas State College said recently.

PUERTO RICO PLANT

(Continued from page 1)

ties on the Bay at Guanica on Puerto Rico's south coast. The anhydrous ammonia plant is designed to produce 42,000 tons per year, part of which will be sold as such to meet the demand in the Island for anhydrous ammonia. The balance will be converted to aqua ammonia, sulphate of ammonia and possibly other products for use by agriculture and other industries.

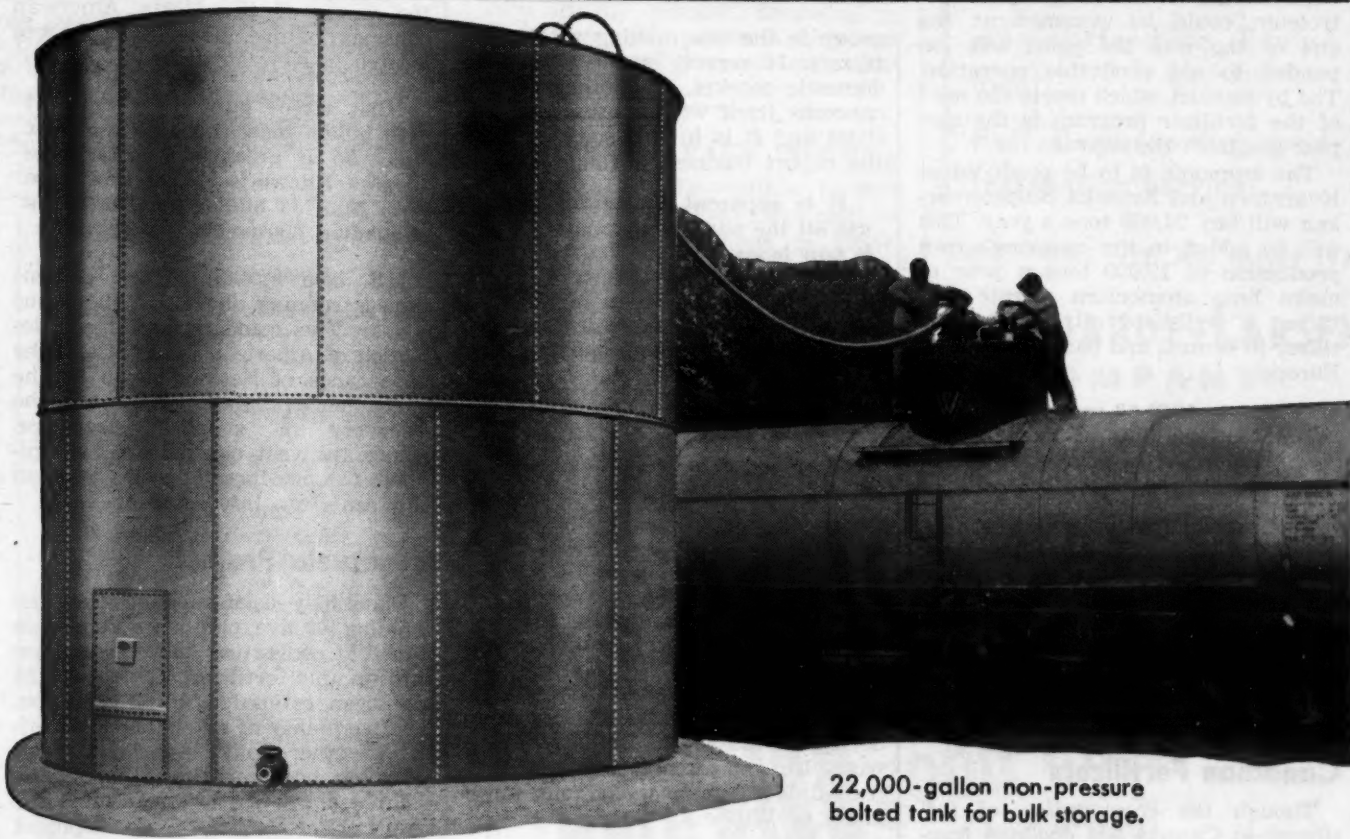
The Lummus Co., New York, is designing and will construct the plant. Cox & Weinrich, Washington, D.C. are consulting engineers for Gonzalez Chemical Industries, Inc.

The financing was arranged by Glore, Forgan & Co. Four mainland insurance companies—Northwestern Mutual Life Insurance Co., Milwaukee, Wis.; State Mutual Life Assur-

ance Co., Worcester, Mass.; Bankers National Life Insurance Co., Montclair, N.J. and the Colonial Life Insurance Company of America, East Orange, N.J., are major participants in the financing.

Other participants are the Government Development Bank for Puerto Rico, the Puerto Rico Industrial Development Co. and the Royal Bank of Canada. This is the first time that mainland insurance companies have financed a new industrial project entirely sponsored by Puerto Rican interest.

In announcing the financing, Mr. Gonzalez stated: "We have been deeply concerned for a long time with the necessity of providing a dependable source of nitrogen for the fertilizer and agricultural industries in the Island."



22,000-gallon non-pressure bolted tank for bulk storage.

BUTLER offers 3 ways to profit from liquid nitrogen bonanza

Take your choice! You can cash in on the country-sweeping liquid nitrogen solution boom with any or all of these Butler special alloy non-corrosive aluminum tanks for bulk or on-farm storage:

1. **Bolted vertical** 22,000-gallon Butler tanks for non-pressure nitrogen solutions.
2. **Welded horizontal** 12,000 and 22,000-gallon bulk storage tanks for low-pressure solutions.
3. **Welded horizontal** tanks in 100, 270, 500, 830 and 1000-gallon capacities. The 500, 830 and 1000-gallon tanks can be factory-equipped with skids for on-the-farm storage or for transporting solutions from bulk station to farm.

More and more farmers are applying nitrogen fertilizers in liquid form. It's fast, and it's low cost. So get in on this soaring market. Send coupon today for full information.



Manufacturers of Oil Equipment • Steel Buildings • Farm Equipment
Dry Cleaners Equipment • Special Products
Factories located at Kansas City, Mo. • Galesburg, Ill. • Minneapolis, Minn.
Richmond, Calif. • Birmingham, Ala. • Houston, Tex.

BUTLER MANUFACTURING COMPANY

7396 East 13th Street, Kansas City 26, Missouri
996A Sixth Ave., S. E., Minneapolis 14, Minnesota
1014 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 96A, Richmond, California

Please send me full information on Butler aluminum

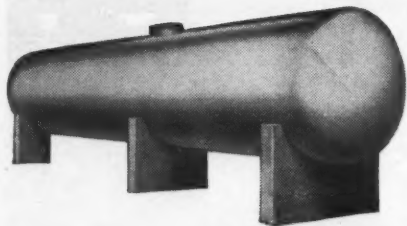
Welded bulk tanks ☐ Bolted bulk tanks ☐ Small horizontal tanks ☐ Skid tanks ☐

Name

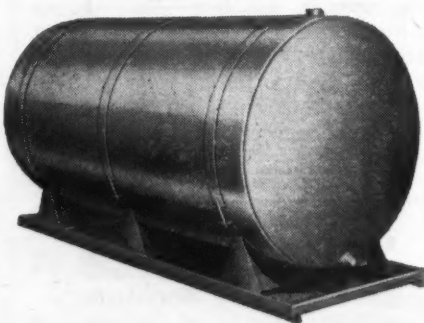
Firm

Address

City Zone State



Welded low-pressure tank for bulk storage. In 12,000 and 22,000-gallon capacities.



Welded low-pressure skid tank for on-farm storage. In 500, 830, and 1000-gallon capacities. Other (without skids) from 100 to 1000 gallons.



WORLD REPORT

Industry News from Everywhere

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Ammonia, produced from shale oil waste products, is to be used to increase fertilizer production in Sweden. Involved in the plan are Svenska Skifferolje A.B., Orebro, a government owned company, and the Svenska Salpeterverken Koping, located at Koping.

The first named firm will produce the additional ammonia, the second will utilize the ammonia to produce fertilizers.

As part of the plan half the share capital of Salpeterverken has been acquired by the Swedish Cooperative Union and the Federation of Swedish Farmers' Associations. The story started during World War II when the Swedish government began a scheme for the large scale recovery of oil from the country's shale deposits to help out fuel requirements. When imports of petroleum could be resumed at the end of the war the plant was expanded to aid profitable operation. The by-product which meets the need of the fertilizer program is the surplus gas from the retorts.

The ammonia is to be produced at Kvarntorp and Svenska Salpeterverken will buy 24,000 tons a year. This will be added to the company's own production of 12,000 tons a year to make lime ammonium nitrate fertilizer, a well-used nitrogenous fertilizer in central and parts of western Europe.

Usage in 1952-53 was assessed at about 600,000 tons of fixed nitrogen, equivalent to nearly 3 million tons of mixture.

The ammonia is to be sent to Koping, located about 40 miles from Kvarntorp, in rail tank cars. Here it will be worked up into fertilizer by the same process already used for Salpeterverken's own ammonia. Currently being investigated is an additional project aimed at producing a compound fertilizer.

Canadian Fertilizers

Though the consumption of fertilizers in Canada has declined fractionally, as far as the general picture is concerned, trade opinion is that the industry is a booming one.

The industry consists of two broad groups. Numerically, the biggest

group is the one making mixed fertilizers. It serves, in the main, the domestic market. The other section concerns itself with the basic necessities and it is in this segment that the export business is found.

It is apparent that Canada can use all the additional capacity that is now being erected, that is, if the present trend continues. Canada has sufficient indigenous supplies of most fertilizer materials except superphosphate and phosphate rock.

Though Canada has phosphate deposits they are difficult to work and supplies are imported from Florida. Another deficiency is in potash but this will be remedied as soon as the heavy deposits of Saskatchewan can be worked.

Two companies, Western Potash and the Potash Company of America, are reported to be making satisfactory progress in their drilling activities.

The potash is found nearest the surface in the northeast, becoming deeper in the south. Recently, Campana, Ltd. of Calgary reported that it had hit potash about four miles north of Wilkie.

Claimed to be the most impressive find yet, the deposit is 100 ft. thick with 45 ft. pure potash and the rest potash mixed with salt. The depth is about the same as

that of the other operating companies—3,500 ft.

Another company, Duval Potash, has received authority to explore 500,000 acres in central Saskatchewan and four drills are in use.

Value of Fertilizer

The Canadian industry does not expect any major decrease in demand because it is able to prove that the expenditure of \$1 an acre can bring increased yields valued at \$2-\$5.

Of even greater importance, however, to that segment of the Canadian industry producing essential raw materials is the valuable market in the adjacent states of the U.S. Most of the Saskatchewan output of potash will likely go for export because the prairie soils are rich in potash anyway. Only 116,000 tons are used in the whole of Canada and half of this is taken up in the eastern province of Ontario.

Saskatchewan contains the only known major deposits of potash in the whole of the North American continent, with the exception of those located in New Mexico.

One survey puts the volume at 100 billion tons, though some of it may be at great and unworkable depths. Known world reserves were less than 55 billion tons until the Canadian discovery.

U.S. consumption at the present time is running about 2 million tons a year. This could mean a rapid depletion of American reserves and the appearance of Saskatchewan as the only other availability, subject to the discovery of supplies elsewhere. Hence the vast expenditure of capital in the province by both Canadian and American interests.

Venezuela Project

Plans have been announced for the building of five plants in Venezuela aimed at converting household refuse into organic fertilizer. The total cost has been estimated at \$3.7 million. The possibility of extending the project to other South American countries has been mentioned though no definite plans will be made until the result of the Venezuelan development is clear.

The sponsor, Hrant Adjemian, claims that he has been asked about the possibility of introducing his process into the U.S.

Atlas Forms British Chemicals Affiliate

WILMINGTON—Atlas Powder Co. and Honeywell & Stein Ltd., British chemicals firm, have announced the formation of a jointly owned company, Honeywell-Atlas Ltd., according to a statement by Ralph K. Gottshall, Atlas president.

The new company will make available from sterling sources sorbitol and a wide range of sorbitol derivatives and other surface active agents developed by Atlas. Honeywell-Atlas Ltd. will make its headquarters at Devonshire House, London W. 1, with L. F. Harris as manager.

Gloomicides

"Is it possible for a man to make a fool of himself without knowing it?"
"Not if he has a wife."

Better nature: One thing our alarm clock never arouses.

Man blames fate for other accidents but feels personally responsible when he makes a hole in one.

A newlywed groom came home one evening with a package of sausage and suggested that the bride prepare them for breakfast. "How do you cook them?" his bride inquired timidly.

"Fry 'em just like fish," instructed the husband patiently.

Next morning the bride sat at the breakfast table and apologized. "I hope you enjoy the sausages, dear but there wasn't much left of them after I cleaned the insides out."

A recruit at the Great Lakes naval training center received this "Dear John" letter from his sweetheart:

"Hello, Honey:
"I am engaged so don't write any more. I am sending your ring back. If you don't need it, send it back to me. My boy friend can't afford one as of now. 'Bye, Nancy."

Suspicious neighbor: "Hello! Jones what are you up to?"

Jones: "Burying my pet canary."
Suspicious neighbor: "Look here—I happen to know you're burying my cat."

Jones: "Yeah, but my canary happens to be inside him."

The springs in the new cars are of such high quality that you can scarcely feel the bump when you run over a pedestrian.

The Library of Congress has a special legislative reference service which can turn up practically any information a congressman desires.

A distinguished senator one day sent the researchers a quotation and requested the author's name. Through book after book the learned librarians searched. They cudgled the brains. They even pored over ancient manuscripts and translated out of the Egyptian. But finally they agreed it was no use. Timidly they called the senator's office and reported the inability to fulfill his request.

"Oh, that's all right," said his secretary. "The senator wrote that himself. He just wanted to be sure nobody else had said it."

"Whoever taught you that dreadful word?" Johnny's mother asked. "The Easter Bunny," he answered righteously.

"The Easter Bunny!" his mother exclaimed.

"Yes, Mama," he answered, "when he fell over the chair in my bedroom on his way downstairs with the eggs."

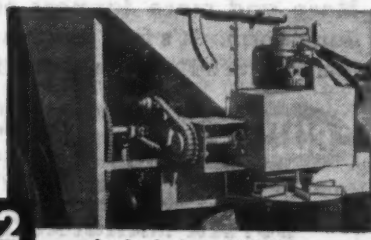
SPREADING WITH THE NEW...

GROUND DRIVE BAUGHMAN LIME and FERTILIZER SPREADER

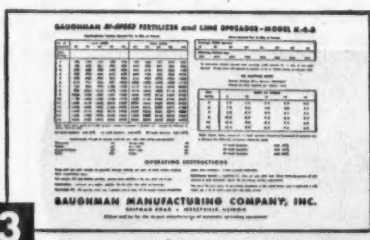
is as simple as
1-2-3



1 simple, foolproof VOLUME GROUND DRIVE. Neither gear shifting at any speed, nor starting and stopping, affect constant, uniform volume control of spread.



2 simple, foolproof WIDTH HYDRAULIC DISTRIBUTOR. Whether your engine speed is 1,000 or 3,000 rpm, you get the same width of spread. No maintenance problems as with gas engine.



3 simple, foolproof endgate SETTING SPREAD CHART. Literally "thinks for you!" Quickly tells you which of the 60 endgate settings to use to get the volume you want—without guesswork.



WRITE FOR NEW LITERATURE

BAUGHMAN MANUFACTURING CO., INC.

108 Shipman Road • Jerseyville, Illinois



Pfizer Visitor—Dr. Abraham Bavley, right, supervisor of research, and Dr. Francis A. Hochstetler, left, research associate, chemical research department, Chas. Pfizer & Co., Inc., greet Dr. H. L. Haller, assistant director of crops research, Agricultural Research Service, U.S. Department of Agriculture, upon the latter's recent visit to the Pfizer plant in Brooklyn, N.Y. Guest speaker at a research seminar on insecticides, Dr. Haller, outlined the importance of the structure of organic chemicals in making more effective pest killers on the farm and in the home.

Program Set for Maryland Fertilizer Safety Conference

BALTIMORE—Details of the program for the Chemical and Fertilizer Section of the Governor's Safety-Health Conference for Maryland have been announced by W. N. Lockwood, Davison Chemical Co., Division of W. R. Grace & Co. The meeting is scheduled to be held at the Lord Baltimore Hotel, May 5-6.

Thomas J. Clarke, GLF Soil Building Service, Ithaca, N.Y., chairman of the Fertilizer Section, National Safety Council, will speak at the opening session Thursday afternoon, followed by a panel discussion of four unusual accidents occurring in the fertilizer industry.

Moderator of the panel will be George F. Dietz, safety engineer, Fertilizer Manufacturing Cooperative, Baltimore. Appearing on the panel will be Edward Derr, safety supervisor of the Baltimore plant of Olin Mathieson Chemical Corp.; H. C. Calvert, general foreman, Davison's Curtis Bay Works, Baltimore; C. M. Barker, superintendent, Virginia-Carolina Chemical Corp., Baltimore; and R. D. Dent, acid superintendent, Baugh Chemical Co., Baltimore. Two additional panel members will be announced later, Mr. Lockwood stated.

Friday's all-day session will feature talks by Joseph Guelich, safety manager, General Chemical Division, Allied Chemical & Dye Corp., New York; John M. Roche, chief of the Safety Division, Chemical Corps Materiel Command; and Brig. Gen. Marshall Stubbs, head of the command. Mr. Guelich will discuss "Safety Procedures for Entering and Cleaning Tanks and Tank Cars," and Gen. Stubbs will speak on "Gas Masks in Peace and War."

Chairman of Friday afternoon's meeting will be A. B. Pettit, supervisor of industrial health and safety, Davison Chemical Co. Division. This session will deal with chemical and fertilizer plant safety.

A talk on "Health Aspects of Handling Pesticide-Fertilizer Mixes" will be presented by James P. Hughes, M.D., head of the department of preventive medicine, Ohio State University, Columbus and chairman of the committee on pesticides of the Fertilizer Section, National Safety Council. His talk is expected to touch upon the manufacture of pesticides, the admixture of pesticides with fertilizers and small plant medical programs.

County to Control Used Bag Movement

SACRAMENTO — Solano County, Cal. has acted to bar the entry of Khapra beetle and the walnut husk fly by controlling the movement of used bags and bagging into the county.

The Khapra beetle, now found in 11 California counties, has not been found in Solano County.

The county restrictions provide that the agricultural commissioner shall be notified of the arrival of bags immediately and these will be held for his inspection. All used bags and bagging will be admitted for storage or use within the county if accompanied by a treatment certificate signed by a certified plant quarantine guardian or by an accredited pest control operator.

Shipments of used bags or used bagging arriving without the required certificate will be refused delivery into the county and will be destroyed or returned to the point of shipment.

Sesame Makes Good Showing in West Texas

SEMINOLE, TEXAS — Sesame is the newest crop in West Texas, but gave a good account of itself on irrigated farms in 1954. Introduced for the first time in this area, it gave a net return somewhat larger than that from grain sorghums.

One satisfied producer, J. L. Fields, grew 42 acres of sesame which produced from 800 to 1,000 lb. per acre. He came out so well on the first year's trial that he intends to plant 150 acres this year.

Preston Underhill of nearby Denver City, said he netted \$30 per acre on sesame as compared to only \$10 with maize. He irrigated the maize twice and the sesame once. He says sesame is easy to farm and harvest, and requires about the same kind of care as cotton, with the exception of insects. Sesame was not harmed by insects in any part of West Texas.

Victor E. Wardlow To Manage MFA Plant

LOCKWOOD, MO. — Victor E. Wardlow has been named manager of the bulk fertilizer mixing plant being constructed here by the Missouri Farmers Assn. Mr. Wardlow, a graduate of the University of Missouri, has been running an anhydrous ammonia applicator for the Jasper (Mo.) Farmers Exchange.

Monsanto Expands Scholarship Program

ST. LOUIS—An expanded program for Monsanto Chemical Co.'s financial aid to scientific education during the 1955-56 school year has been announced by Dr. Carroll A. Hochwalt, vice president.

A total of 53 American colleges and universities will benefit from 72 separate direct aid awards under the program. This is an increase of nine in the number of schools aided and an increase of 15 in the number of awards over the company's 1954-55 program.

The awards for the coming school year include 16 fellowships, 31 undergraduate scholarships and 25 cash grants. The fellowships are established for graduate study with the larger part of their \$3,000 average value going to the fellow. The scholarships are intended to cover tuition costs with the administering schools awarding them on bases of both merit and need. The cash grants may be used at the schools' discretion to finance research, purchase equipment or further any other scientific purpose.

MINNESOTA FARM INCOME

ST. PAUL—Minnesota's farmers received \$1,280 million from cash receipts of farm products in 1954—slightly less than in 1953. According to Rex W. Cox, associate professor of agricultural economics writing in the current issue of the University of Minnesota's Farm Business notes, receipts from sales of crops, hogs and cattle were higher than in 1953, but sales of dairy products, eggs and chickens were much lower.

ANHYDROUS AMMONIA

- Custom Bulk Plant Installations.
- Distributors for John Blue Nitro Shooters.

We feature a complete line of Anhydrous Ammonia Handling Equipment.

Full Engineering and Installation Service.

WRITE — WIRE — PHONE MAIN 5976

BURKHARDT-LARSEN COMPANY

Dept. B 519 No. Third St.
Minneapolis 1, Minnesota

Triangle Brand Copper Sulphate has been recognized as an effective agricultural chemical for more than sixty years. In sprays (where Bordeaux mixtures are the most reliable), in dusts (if you prefer them) and in fertilizers (for additional enrichment of the soil) Triangle Brand Copper Sulphate has proved itself worthy and dependable. Try these Triangle Brand forms of Copper Sulphate:—

INSTANT (powder) for quick and efficient mixing of Bordeaux sprays.

SUPERFINE (snow), **SMALL** or **LARGE CRYSTALS**, all containing 25.2% metallic copper.

BASIC Copper Sulphate in powder form, containing 53% metallic copper.

Control **POND SCUM** and **ALGAE** with Triangle Brand Copper Sulphate. Write today for information on how it can help you maintain healthy water conditions.

Write for booklets that will help you solve your agricultural problems.

PHELPS DODGE REFINING CORP.
40 WALL ST. NEW YORK 5, N. Y. • 330 N. MICHIGAN AVE. CHICAGO, ILL.



PESTICIDE OUTPUT

(Continued from page 1)

icates a trend toward specialized products for particular control measures. Available information also denotes that exports of these miscellaneous commodities were considerably higher than in 1953.

Exports of pesticides in 1954 (excluding household disinfectants) were 13% above shipments abroad in 1953. The greatest increase was in DDT—45%—but the category under which exports of the newer insecticides and fungicides are recorded ("Miscellaneous agricultural insecticides and related materials") showed a comparable increase of 42%. The table gives exports for 1953 and 1954 (preliminary) for the various categories as recorded by the Bureau of the Census.

U.S. Exports of Pesticides, 1953 and 1954*		
(in thousands of pounds)		
Commodity—	1953	1954
Benzene hexachloride (100% gamma isomer basis) ...	1,838	2,085
Calcium arsenate ...	3,890	1,976
Copper sulfate ...	65,317	59,527
DDT (25% and above on a 100% basis) ...	29,292	42,695
Household and industrial insecticides ...	11,912	14,070
Lead arsenate ...	303	649
Nicotine sulfate ...	332	200
Paradichlorobenzene ...	1,398	2,253
Pyrethrum extract ...	188	138
Sulfur formulations, containing 20% or more sulfur ...	26,861	12,910
Sulfur, agricultural, not elsewhere classified ...	23,330	28,586
Weed killers ...	11,954	14,832
Misc. agricultural insecticides and related materials, not elsewhere classified ...	66,788	95,232
Total ...	243,403	275,063

*Preliminary; total of monthly data.
Source: Compiled from data supplied by Bureau of the Census.

HEADS CHAMBER

ROANOKE, VA.—Frank A. Ernst, manager of the Hopewell, Va. plant of Allied Chemical & Dye Corp., is the new president of the Virginia State Chamber of Commerce.

Lindane Shows Value As Pheasant Repellent

EAST LANSING, MICH.—There is considerable interest among the county agricultural agents, farmers, game management specialists and others in an experiment being conducted in Ottawa County, Mich., to control pheasants that pull up newly-sprouted corn.

The tests are not very extensive, but the results reported by Ottawa County farmers are encouraging.

Nine Ottawa County farmers, who operate plots about 40 miles west of Grand Rapids along the Lake Michigan shoreline, put lindane on their corn seed just before planting. Very few of those sprouting corn plants were nipped off by the pheasants.

Charles Shick, game management specialist at Michigan State College, explains that the pheasants apparently didn't like either the taste or the smell and so they didn't bother the corn seedlings.

Mr. Shick says lindane is easily applied and does not clog the corn planter. Here are the directions:

Moisten the seed corn with water—about one pint of water per bushel of seed. This will allow the powdered lindane to stick to the kernels. Then mix 2 oz. of 25% lindane with a bushel of seed corn.

Mosquito Control

SACRAMENTO — The California State Senate's Finance Committee has approved a \$400,000 budget item for local mosquito control programs with a proviso earmarking at least \$25,000 for research. The money approved would be used, if the budget is given final approval, to assist in supporting the programs of 26 mosquito abatement districts and through health departments throughout California.

POTASH DELIVERIES

(Continued from page 1)

countries amounted to 12,377 tons K₂O.

In this country, agricultural potash was delivered in 45 states and the District of Columbia. Illinois with over 216,000 tons K₂O was the leading state followed in order by Ohio, Indiana, Georgia, Virginia and Florida, each taking more than 100,000 tons K₂O during the year. Due to shipments across state lines, consumption does not necessarily correspond to deliveries within a state.

Agricultural potash accounted for over 95% of deliveries. Muriate of potash continued to be by far the most popular material, comprising nearly 93% of the total K₂O delivered for agricultural purposes; sulphate of potash and sulphate of potash magnesia over 75%, and manure salts an insignificant percentage of deliveries.

In the fourth quarter of 1954, deliveries totaled 980,469 tons of salts containing an equivalent of 567,770 tons K₂O, an increase of 25% compared to K₂O deliveries during the same period in 1953, the continental U.S. received for agricultural purposes 483,193 tons K₂O, Canada 39,475 tons, Cuba 3,275 tons, Puerto Rico 5,139 tons, and Hawaii 3,986 tons. Exports to other countries were 5,976 tons K₂O.

In addition to the regularly reported deliveries on the quarterly basis, information from governmental and other sources indicates that during the second half of 1954, there were additional imports of European potash into Cuba, the U.S., Canada, and Puerto Rico of 70,986 tons K₂O as muriate of potash and 18,881 tons K₂O as sulphate of potash. These figures are included in the deliveries for the fourth quarter.

The accompanying table gives a state-by-state breakdown of shipments of muriate of potash, manure salts and sulphates, as reported by A.P.I.

AGRICULTURAL TYPE POTASH SALES IN TONS K ₂ O			
	Muriate of potash	Manure salts	Sulphates
Alabama ...	60,183.69	37.00	184.33
Arizona ...	89.00	...	465.00
Arkansas ...	41,901.66	148.13	135.62
California ...	7,391.00	...	6,088.00
Colorado ...	552.26	...	75.41
Connecticut ...	3,860.22	...	954.03
Delaware ...	7,996.17	...	55.01
Dist. of Col. ...	346.02	...	96.39
Florida ...	74,382.94	47.00	29,801.08
Georgia ...	117,430.31	62.37	9,208.32
Idaho ...	414.91	...	...
Illinois ...	215,765.90	...	874.82
Indiana ...	140,974.12	...	3,877.78
Iowa ...	43,896.88	43.74	114.74
Kansas ...	2,468.29	333.21	...
Kentucky ...	30,279.79	...	15,229.73
Louisiana ...	28,304.44	...	171.94
Maine ...	10,627.71	...	420.75
Maryland ...	68,794.38	...	4,103.16
Massachusetts ...	11,220.96	...	1,106.28
Michigan ...	48,015.30	...	453.20
Minnesota ...	42,976.61	...	254.20
Mississippi ...	29,533.29	...	174.56
Missouri ...	46,501.90	264.31	261.57
Montana ...	59.00	...	...
Nebraska ...	2,075.02	...	24.02
New Jersey ...	37,811.45	46.38	1,112.31
New Mexico ...	49.01	1.00	...
New York ...	29,929.44	...	1,110.92
N. Carolina ...	73,943.84	128.10	19,080.63
N. Dakota ...	2,458.90	...	9.02
Ohio ...	169,563.70	...	5,162.70
Oklahoma ...	4,159.22	...	8.80
Oregon ...	4,871.81	...	133.67
Pennsylvania ...	34,613.37	...	1,129.67
Rhode Island ...	1,695.39	...	58.97
S. Carolina ...	56,251.88	156.70	4,132.09
S. Dakota ...	121.60	...	...
Tennessee ...	69,673.17	...	6,733.07
Texas ...	34,564.17	...	314.15
Utah ...	191.00	...	...
Vermont ...	460.77	...	...
Virginia ...	91,324.68	...	15,549.40
Washington ...	5,328.00	...	162.75
W. Virginia ...	1,248.74	...	...
Wisconsin ...	52,288.99	44.87	1,968.09
Total ...	1,703,480.90	1,312.81	130,086.28
Imports ...	79,908.36	...	27,127.98

BEST SPRAY NOZZLE

COLLEGE STATION, TEXAS — The hollow-cone type spray nozzle is superior to those which give a flat fan-shaped spray pattern for cotton insect control, according to three-year tests at the Texas Agricultural Experiment Station. Throughout the studies, sprayed plots yielded approximately half a bale more cotton an acre than untreated plots.

San Francisco Area Firms Spend \$7 Million For Expansion in 1954

SAN FRANCISCO — Between \$6 and \$7 million, according to a rough estimate, is the amount of money invested during 1954 by agricultural chemical manufacturing firms for plant construction work in 12 counties comprising the San Francisco Bay Region.

(An article appearing on page 2 of the March 14 issue of Croplife reading that "almost \$11 million" was invested in Northern California for such construction "during 1954" should have read "during 1953.")

The sum includes both new plants and expansions or improvements in existing plants, as recorded by the San Francisco Chamber of Commerce. The list includes three new plants and nine improvements to existing structures.

Included in the new plants are two whose investment is "between half a million and three million dollars": Agriform Co., Inc., constructing a new factory in Woodland for the manufacture of liquid fertilizer, and the Shell Chemical Corp., whose new factory will be in Martinez for the manufacture of para-tertiary-butylbenzoic acid.

The third new plant, the cost of which is estimated at "under half a million dollars" is that of Lush, Inc., at Perkins, to produce fertilizer.

The largest of the plant expansions is to Shell's anhydrous ammonia plant at Shell Point, calling for an investment of between half a million and three million dollars.

Eight other plant expansions were announced as being started during the calendar year of 1954, although not necessarily completed during the year. These are the California Farm Supply Co. at Stockton, for the production of insecticide dust; The California Spray Chemical Corp. at Richmond, for the production of agricultural insecticides, fungicides and herbicides; the Chipman Chemical Co. of East Palo Alto for manufacturing agricultural chemicals; the Iron Mountain Corp., a subsidiary of Mountain Copper, Ltd., for production of chemicals and fertilizers; Reichhold Chemicals, Inc., of South San Francisco, for the production of various types of chemicals; Shell's plant at Pittsburg, for production of ammonia fertilizers; Standard Oil Company of California at Richmond, for the production of phenol; and the Stauffer Chemical Co. at Richmond for the production of sulfuric acid and other chemicals.

Farm Supply Sales Gain in California

SAN FRANCISCO—Sales of farm implement dealers and farm and garden supply stores in California showed increase during the last quarter of 1954.

The first group of dealers, whose sales of farm chemicals are included in the totals, sold almost a quarter again as much equipment between Oct. 1 and Dec. 31 of last year than they did for the same three months of 1953. Sales for the period totaled \$37,763,000, up 22.69%, according to statistics released by the Division of Research and Statistics of the California State Board of Equalization. Sales for the entire year of 1954 totaled \$151,630,000 through these retail outlets.

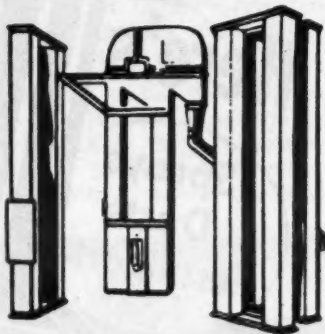
Farm and garden supply stores, who also count chemicals within their sales figures, showed an increase of 2.28% during the quarter, or a total of \$18,125,000 for the three months.

The year total for the farm and garden supply stores was \$86,105,000 or for the two groups, \$237,735,000. The estimates are based on sales tax collections made through the Board of Equalization.

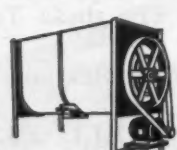
For Efficient Fertilizer Handling! BURROWS ALL STEEL

ELEVATOR LEGS!

You are assured of maximum efficiency for elevation of fertilizer or minerals. Burrows Elevator Legs are dust-tight and when required, weather-proof for outside installation. They are made in three pieces for easy installation. Inspection doors provide for easy application of belt tightener for lacing and attaching cups. Capacities from 800 bushels to 5400 bushels. Write for illustrated information.



EZE MOVE SCALE
Equipped with 1,000-lb. Fairbanks scale—gravity discharge—available in many sizes—weighs to the ounce as material is handled—save time and money.



BATCH MIXER
Guarantees precision mixing of fertilizers. Heavy construction—ball bearings throughout. Capacities from 1/2 ton to 2 tons.



VERTICAL SCREW CONVEYOR
For faster vertical handling of fertilizer, minerals, etc. Built to the length you need in diameters of 6"—9"—12". Easy clean out features.

All Your Needs—All The Time
Write for Complete Information and Our Free 100-page Catalog!

BURROWS
EQUIPMENT COMPANY

1316-V Sherman Ave.

Evanston, Ill.

Production Costs Turn Out to Be Good Investment

PECOS, TEXAS — Cotton farmers in Reeves County had what may have been the highest production costs in the nation last year. According to a recent survey by Buck Wheat, the county agent, the average farmer spent \$134.50 per acre to produce the 1954 crop. Itemized costs per acre included planting seed \$6.74, insecticides \$15.10, fertilizer \$24.38 and land preparation \$11.81. Major costs went for labor, butane and electricity and water. There were also smaller expenses for upkeep of machinery, well repairs, trips to town, etc.

While spending much more than cotton farmers in other areas, the Reeves County growers made one of the highest yields in the nation. The county average was 2.37 bales per acre, which is almost a bale more than farmers in other sections grew. The gross sales amounted to over \$400 per acre.

Profit in Lambs

LAFAYETTE, IND. — Most good corn belt farms can return from \$75 to \$125 per acre for good pasture through the sale of lambs and wool, says Russell Brower, Purdue University extension animal husbandman. Mr. Brower says that succulent, well-fertilized legume pastures are the basis for a sound sheep flock management program.

NAMED TO BOARD

ALBUQUERQUE — Edward Edmunds, Jr., president of Edmunds Chemical Co., Albuquerque, has been elected to the board of directors of the New Mexico Manufacturers Assn. He is a past president of this group.

INSECT, PLANT DISEASE NOTES

(Continued from page 5)

Vincennes. Heavier precipitation occurred in the Evansville, Ind., area. The rains and cooler weather have slowed down insect development and activity since April 22, but they are expected to become active again with the present warming weather. Apples are ready for the calyx spray (April 26-29).

Red-banded leaf roller eggs began hatching April 19. First brood hatch is about complete. The apple leaf roller was observed doing moderate damage to apple foliage in one orchard near Vincennes on April 26.

Codling moth pupae are ready for emergence, but no emergence has actually occurred to date. DDT, included in the first cover spray (not the calyx spray), will help reduce adults and consequent egg laying. Carry-over of larvae from 1954 is high and, at present, it is anticipated that first brood worm activity will be high.

European red mite counts made April 22 showed an average of 183 mobile forms per 100 leaves and 28 eggs where dormant oil sprays were not applied; in contrast to 14 mobile forms and 1 egg per 100 leaves where a 3% dormant oil was applied. In general, mites on non-oiled trees in this area are beginning to build up, although heavy rains during the past few days have slowed them down temporarily.—D. W. Hamilton.

High Survival of Weevils in S. Carolina

CLEMSON, S.C. — In Florence County, South Carolina, only about half as many weevils entered hibernation last fall as the 11-year average. However, because survival rate

was unusually high (95%), the number of insects ready to invade cotton fields is not much below the 18-year spring average (USDA report), April 15.

First corn billbug damage to corn for 1955 was found on April 11. About 5% of the plants were damaged in one field. Plants were 2-4 in. high.

Grasshoppers, Cutworms On Missouri Horizon

COLUMBIA, MO. — We are still finding cutworms scattered over the entire state. So far little spraying has been done, but we still believe these worms offer a serious threat to several crops.

A few scattered red-legged and Mexican 'hoppers have hatched, but the big hatch has not yet started. It is not yet time to spray, but it is time to suggest that your farmers start figuring out their pasture rotation so that they can spray out infested pastures when the time comes—which will probably be within another two or three weeks.

These early-hatching species will be found primarily in pastures and waste lands. Their eggs are not grouped in small areas as much as are the larger hoppers which will hatch a few weeks later. This means that a lot of pastures will need to be sprayed out completely if small hoppers are pretty well scattered over the entire acreage.

Heavy armyworm moth flights have continued during the week. The first small worms were picked up in the boot heel area, but it's still too early to know how heavy the infestation may be. With an insect such as armyworm—particularly when we are able to catch the first hatch—

there is ample time to check the infestation before spraying is needed.

In those areas of the state that have been getting plenty of moisture, fungus disease is hitting clover leaf weevils and reducing their potential. Legumes are growing very rapidly, and it now looks as though most old established stands will be able to get by without spraying. Some new seedlings, or some drouth hit stands may still need protection.

We are having complaints about cutworms cutting off newly-set garden plants. Also there has been some increase in pea aphids—particularly in the southern part of the state. As fast as alfalfa is growing, however, it is very doubtful that they can build up fast enough to hurt too much.

Wheat Sawfly Makes California Appearance

SACRAMENTO, CAL. — The first wheat sawfly larvae of the season were found in recent surveys conducted by the California Department of Agriculture in the Cuyama Valley.

Adults also were found in small numbers over the 12,000-acre area treated last spring. Peripheral surveys have not as yet extended the limits of the infestation.

Illinois Firm Begins Output of Solution

SPRINGFIELD, ILL.—The Chemilizer Corp. has started production of solution fertilizer here. Officers of the firm are K. G. Cole, president; E. A. Purnell, treasurer, and James W. Sheldon, secretary.

Initial production will be 50 tons a day, and when final equipment installations are made, the output will be increased to 300 tons a day. The plant will serve an area within a 50 mile radius of Springfield.

PENCO'S ALMANAC

IN THE MIDWEST . . .

NOW is the right time to stock PENCO Agricultural Chemicals! Give your customers advantage of selecting highly concentrated, quality emulsion products for control of Spittlebug, Corn Borer, Armyworm, and other major pests. Users can rely on PENCO brand Agricultural Chemicals.

To better serve the great Midwest area, Pennsalt has established a Division office for Agricultural Chemicals at 205 Graham Building, Aurora, Illinois. Telephone Aurora 6-8545.

Remember — North, East, South, or West . . . PENCO PRODUCTS are always best. Pennsalt distributes a complete line of PENCO quality agricultural chemicals to meet pesticide requirements — DDT, BHC, Lindane, Cotton Dusts and Sprays, Defoliant, and Chemical Harvest Aids; other herbicides and pesticides including Penite 6X, Sodium Chlorate, Kryocide, Parathion, Ferbam, Aldrin, Malathion, and Toxaphene.

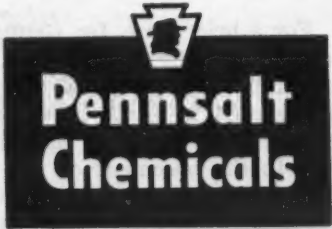
19 MAY 55

SUN.	MON.	TUES.	WED.	THUR.	FRI.	SAT.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	6 FULL MOON	14 LAST QUARTER	21 NEW MOON	28 FIRST QUARTER

PENNSYLVANIA SALT MANUFACTURING CO. OF WASHINGTON

Tacoma 1, Washington

Portland, Ore.; Berkley, Calif.; Los Angeles, Calif.; Bryan, Tex.; Montgomery, Ala.; Aurora, Ill.; Philadelphia, Penn.; Wenatchee and Yakima, Wash.



**Pennsalt
Chemicals**

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The rotational circulation of this issue is concentrated in the Midwestern states.

Advances in Technology

Just how closely industrial development and human progress go together was discussed in a recent talk by Harold Brayman, director of the Public Relations department of E. I. duPont de Nemours & Co. To continue increasing the standard of living in the U.S. will require the application of national resourcefulness, bringing technical capacities to more people and through lowering costs and improving performance of industry, he pointed out.

This principle is well illustrated in the case of American agriculture, he said. Around 1800, it took nine men on the farm to produce enough food for themselves and for one person in the city. "That meant that only one out of 10 in our population could be producing the other necessities and luxuries of life, or devoting himself to education and other cultural pursuits."

"Today the situation is that one man on the farm produces enough food for himself and 17 others. That means that millions of people can devote themselves to the production of goods which we did not have in 1800, many of them in the luxury classification, or to education or other cultural or recreational pursuits."

An Illinois farmer who with power machinery and the assistance of one man, farms 420 acres is a good example of this progress. When he started out in 1933, it took five men and 20 horses to do a poorer job. A survey by the University of Illinois shows that in the last 25 years, the number of acres tilled by one man has increased from 113 to 149, while the yield of corn per acre has gone up 37%, soybean harvests 74%, and wheat yields 41%.

For the whole nation, assistant secretary of agriculture Earl L. Butz reports that since the beginning of the Second World War, "American farmers have increased their total production by 35% with no increase in acres."

"Because of the technological developments of recent decades, our whole system of living has

been changed and greatly improved for the better," Mr. Brayman declared. "In 1900 it was customary for both the husband and the wife in nearly every family to work from dawn to dusk or longer. On the farm or in the factory the 10- to 12-hour day was standard, six days a week.

"What a difference we see today! Productivity has been tripled since the turn of the century by technological gains introduced by industry. Machines turned by electric motors do the heavy work in the shops just as they do in the homes. Since these new machines and new processes have cut costs and enable a man to turn out far more products in far less time, his employer pays much higher wages for a standard eight-hour, five-day week.

"He looks a lot younger than his grandfather because his work doesn't take as much out of him physically. His horizon has broadened considerably because it isn't uncommon for him to take the family for a 500-mile trip over the week-end. He has time to do a lot more reading, which, with the television and radio, helps him to keep much better informed.

"Even as compared to 25 years ago, the average American works 15% fewer hours, and has 50% more purchasing power. It is estimated that, if productivity continues to increase at the present rate, the cash income of the average American family by 1980 will be \$6,600 a year, after taxes, in terms of present dollars.

"This is the way our standard of living has advanced. This is the way our cultural, educational, and social developments have come about. Nearly every improvement contributing to these developments has been made possible by our industrial progress. We have, in this country, brought the benefits of that progress to every home. Strange as it may seem, our venturing, risk-taking economy has brought an economic advance to our people which is the envy of socialists the world over."

BIOGRAPH

Pesticide Industry Honors Dr. E. L. Griffin

In a day, when the relationships between scientists and government are very much in the news, the retirement of a chemist who has been in government service for 42 years may be revealing.

On April 27 the National Agricultural Chemicals Assn. and other representatives of the pesticide industry honored Dr. E. L. Griffin, retiring assistant head of the Pesticide Regulation Section, Plant Pest Control Branch of the Agricultural Research Service, U.S. Department of Agriculture.

Dr. Griffin arrived in Washington in 1910, via a Kansas farm and the University of Kansas. When he joined the Department of Agriculture, it had 12,480 employees (it now has 76,767).

He started as an assistant chemist analyzing Bordeaux mixtures, at a time when this, together with lead arsenate paste and Paris green, constituted the principal stock of insecticides. "No one worried about residues in those days," says Dr. Griffin.

For a brief time, Dr. Griffin could say that he was a chemical manufacturer. When World War I cut off the supply from Germany of a sticky substance used to band trees against gypsy moth, Dr. Griffin swung into action on an emergency basis in the basement of the laboratories of the Chemical Bureau, and brewed two tons of a substitute compound in a 50 lb. kettle.

There were other moments of improvisation in

early days, he also recalls, including the time when he conducted experimental work on the roof of the Chemical Bldg. in downtown Washington to make hydrocyanic acid for use in fumigating cotton.

"Since 1928," says Dr. Griffin with a smile, "I have been a desk chemist. But it is a job which has never become routine."

Though his office looks out on the Capitol, the excitement and headlines symbolized by that structure seem far removed, and an atmosphere of quiet efficiency prevails. Dr. Griffin himself, alert yet calm, represents the highest type of public servant: technically qualified, dedicated, persistent, gentlemanly.

He is a far cry from the mental image that many people still conjure up when they think of a "bureaucrat."

Working over 40 years on enforcement of various insecticide acts, as various administrations have come and gone, Dr. Griffin has earned the recognition of the pesticide industry and of government for his long, able service.

Following his retirement at the end of this month, Dr. Griffin will return to Kansas, where he has a small river-bottom farm four miles north of Lawrence.—From National Agricultural Chemicals Assn. News and Pesticide Review.



CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at \$5 for one year, \$9 for two years (\$8 a year outside the U.S. and possessions). Single copy price, 25¢.

LAWRENCE A. LONG

Editor

DONALD NETH

Managing Editor

EDITORIAL STAFF—George L. Gates, Market Editor; John Cipperly, Washington Correspondent; George E. Swarbrick, Canadian and Overseas Editor; Emmet J. Hoffman, Merchandising Editor; L. R. McDonald, Research Director; Frank W. Cooley and Roger Berglund, Assistant Editors.

WILFRED E. LINGREN

Advertising Director

BUSINESS STAFF—Carroll K. Michener, Chairman of the Board of Directors; H. J. Pattridge, Honorary Chairman; Harvey E. Yantis, President; Milton B. Kihlstrum, Executive Vice President and Treasurer; Martin E. Newell, Vice President; Don E. Rogers, Vice President; Wilfred E. Lingren, Secretary and Advertising Director; Thomas A. Griffin, Business Manager; Edwin J. Hartwick, Circulation Manager; James G. Pattridge, Assistant Treasurer; Carl R. Vetter, Advertising Production Manager; Peter G. Psychogios, Classified Advertising Manager.

BRANCH OFFICES

EASTERN STATES—George W. Potts, Paul L. Dittmore, Co-Managers, 114 East 40th St., New York 16, N. Y. (Tel. Murray Hill 3-3768).

CENTRAL STATES—Don E. Rogers, Manager; Henry S. French, Assistant Manager; 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782).

SOUTHWEST—Martin E. Newell, Manager; James W. Miller, Assistant Manager; 614 Board of Trade Bldg., Kansas City 6, Mo. (Tel. Victor 1350).

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

EXECUTIVE AND EDITORIAL OFFICES—2501 Wayzata Blvd., Minneapolis, Minn., Tel. Main 0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D. C. (WA 82). Cable Address: "Palmking," Minneapolis.

Published by
The Miller Publishing Co.

2501 Wayzata Blvd.
Minneapolis, Minn.
(Address Mail to P.O. Box 67,
Minneapolis 1, Minn.)

Associated Publications
THE NORTHWESTERN MILLER
THE AMERICAN BAKER
FEEDSTUFFS
MILLING PRODUCTION

MEETING MEMOS

May 3-4—Carolinas-Virginia Pesticide Formulators Assn., Inc., Scandia Village, N.C.; J. B. Maddrey, 3111 Broad Creek Road, Norfolk 12, Va., Secretary.

May 5-6—Fertilizer Safety Section, Governor's Safety-Health Conference, Lord Baltimore Hotel, Baltimore, Md.

May 15-17 — Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., executive secretary.

May 19—Fertilizer Section, 25th Annual North Carolina Safety Conference, Robert E. Lee Hotel, Winston Salem, N.C.; William C. Creel, Safety Director, Department of Labor, State of North Carolina, Raleigh, Chairman.

June 2 — South Carolina Fertilizer Meeting, Sandhill Experiment Station, near Columbia, S.C.

June 3—Fertilizer Section, Virginia State Safety Assn., Jefferson Hotel, Richmond, Va.; William C. Richardson, Southern States Cooperative, Richmond, Chairman.

June 12—Executive Committee, Fertilizer Section, National Safety Council, Roanoke, Va.; Thos. J. Clarke, GLF Exchange, Ithaca, N.Y., Chairman.

June 12-15—Joint meeting, American Plant Food Council, Inc. and National Fertilizer Assn., Greenbrier Hotel, White Sulphur Springs, W. Va.; Paul T. Trullitt, American Plant Food Council, 910 17th St. N.W., Washington, D.C., in charge of registration.

June 21—Western Agricultural Chemicals Assn., Spring Meeting, Clark Hotel, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Secretary.

June 22—Pacific Slope Branch, Entomological Society of America, Mission Inn, Riverside, Cal.

June 28-30 — Sixth Annual Pacific Northwest Plant Food Assn., Regional Fertilizer Conference, Boise Hotel, Boise, Idaho; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

July 5-8—Plant Food Producers of Eastern Canada, Bigwin Inn, Muskoka, Canada.

July 14-15—Southwest Fertilizer Conference and Grade Meeting, Buccaneer Hotel, Galveston, Texas.

Aug. 8-10 — Summer Meeting of North Central Division, American Phytopathological Society, Wooster, Ohio; further information from H. C. Young, Dept. of Botany & Plant Pathology, Ohio Agricultural Experiment Station, Wooster, Ohio.

Aug. 9-11—Ohio Pesticide Institute Meeting and Field Tour, Wooster, Ohio; Dr. J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, Secretary.

Aug. 10—Kentucky Fertilizer Conference; Guignol Theatre, University of Kentucky, Lexington.

Aug. 15-19 — American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.

Aug. 15-20—Farm & Home Mechanization Pageant, Michigan State College, East Lansing, Mich.

Sept. 7-9 — National Agricultural Chemicals Assn., Spring Lake, N.J.; Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

Sept. 7-9 — Ninth Annual Beltwide Texas A&M College, National Cotton Council of America, Box 18, Cotton Mechanization Conference, Memphis 1, Tenn.

Oct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago; Thomas J. Clarke, Chairman.

Nov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Blerly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.

Nov. 29-Dec. 2 — Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

1956

Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York, W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Jan. 26-29 — Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Feb. 15-17—Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Quote

"One half of the people in the world go to bed hungry every night. And if all the food in the world were distributed equally, we'd all go to bed hungry every night."—Dr. N. E. Winters, former soil conservation director in Oklahoma.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch. All Want Ads cash with order.

FOR FAST ACTION
AND RESULTS

try

Croplife's

CLASSIFIED
ADVERTISING

CORN YIELD AWARD

MORGANTOWN, W.VA. — J. O. Knapp, director of the Agricultural Extension Service, West Virginia University, has announced that a new, additional award for contestants in the 1955 West Virginia Hybrid Corn Yield Contest will be made. This award will be an engraved certificate to be presented to all contestants whose corn yield amounts to more than 100 bu. shelled corn per acre. There were 19 persons who qualified for such a certificate in the 1954 competition.

**FEED
FERTILIZER**
BRADLEY & BAKER

INDEX OF ADVERTISERS

Acme Fisher Div., Broadway Corp.
Acme Protection Equipment Co.
Agricultural Chemicals Division,
Pittsburgh Coke & Chemical Co.
Agricultural Chemical Equipment Co.
Allied Chemical & Dye Corp.,
General Chemical Division.
Allied Chemical & Dye Corp., Nitrogen Div. 10, 11
American Potash & Chemical Corp.
Anco Manufacturing & Supply Co.
Ashcraft-Wilkinson Co.
Bagpak Division, International Paper Co.
Baker, H. J., & Bro. 18
Baughman Manufacturing Co., Inc. 8
Beaird, J. B., Company. 23
Bemis Bro. Bag Co. 19
Bradley & Baker. 17
Broadway Rubber Corp. 16
Burkhardt-Larsen Co. 20
Burrows Equipment Co.
Butler Manufacturing Co.
Calcium Carbonate Co.
California Spray-Chemical Corp.
Campbell, H. D., Co.
Chase Bag Co.
Chemical Specialties.
Chipman Chemical Co.
Clover Chemical Co.
Commercial Solvents Corporation.
Croplife.
Deere & Co., Grand River Chemical Div.
Diamond Alkali Company.
Doane Agricultural Service.
Douglas Chemical Co.

E. I. Dupont de Nemours & Co. Inc. 5
Ellsworth Equipment Co.
Export Chemical Corp. of Colorado.
Fischbein, Dave, Co.
Floridin Company.
Frontier Chemical Co.
Gandrud, E. S., Co.
Geigy Agricultural Chemical Co. 2
General Chemical Division,
Allied Chemical & Dye Corp.
Gotcher Engineering & Mfg. Co.
Grace Chemical Co.
Grand River Chemical Div., Deere & Co.
Hahn, Inc.
Hammond Bag and Paper Co. 4
Henderson Mfg. Co.
Hercules Powder Co. 24
Highway Equipment Co.
Hills-McCanna Co.
Hypro Engineering, Inc. 6
International Minerals & Chemical Corp.
International Paper Co., Bagpak Division.
K. B. H. Corporation, The.
Kay Enterprises.
Kraft Bag Corporation.
Larvacide Products, Inc.
Lion Oil Co. 15
The Mackwin Co.
Markley Laboratories, The. 7
Wilson & George Meyer & Co.
Michigan Chemical Corporation.
Midstate Machinery Co. 4
Naugatuck Chemical Div., U.S. Rubber Co.
Nelson, Edward S., Ltd.

Nitrogen Div., Allied Chemical & Dye Corp. 10, 11
Pacific Coast Borax Co.
Pacific Plastics Company.
Pennsylvania Salt Manufacturing Company
of Washington. 21
Chas. Pfizer & Co., Inc.
Phelps-Dodge Refining Corp. 19
Phillips Chemical Company. 3
Pittsburgh Coke & Chemical Company,
Agricultural Chemicals Division.
Potash Company of America.
Poulsen Company.
Powell, John & Co., Inc.
Private Brands, Inc.
Rapid Machinery Co.
Riverdale Chemical Co.
Savage, K. E., Co.
Schrack Fertilizer Service.
Shell Chemical Corp.
Specifide, Inc.
Spencer Chemical Co.
Spray Dust, Inc.
Stoker, H. S., Company.
Tennessee Corp.
Thompson-Hayward Chemical Co. 13
Union Bag and Paper Corp.
United Petroleum Gas Co.
U.S. Industrial Chemicals Co.
United States Potash Co.
U.S. Rubber Co., Naugatuck Chemical Div.
United States Steel Corp. 7
Velsicol Corporation.
Virginia-Carolina Chemical Corp.
Vulcan Stamping & Mfg. Co.
Vulcan Steel Container Co.



NO TWO-BIT GLUTTON

Armyworms or cutworms are no bigger than a quarter but their ravenous appetite can cost you tremendous crop damage.

Successful farmers have found that toxaphene will stop these pests in a hurry. And the same holds true for overwintered boll weevils, fleahoppers, thrips—the mixed population of insect pests now invading many fields in this area. Toxaphene control protects your crop now, and helps avoid later season buildups.

Toxaphene sprays are preferred for their outstanding economy, but dust or spray you'll find toxaphene measures up to the demands you make of an insecticide. See your dealer now. He has an adequate supply of toxaphene insecticides on hand.

TOXAPHENE dusts · sprays

Agricultural Chemicals Division, Naval Stores Department
HERCULES POWDER COMPANY
INCORPORATED

931 Market St., Wilmington 99, Del.

Plants at Brunswick, Ga., Hattiesburg, Miss. Offices at
Atlanta, Birmingham, Brownsville, Dallas, Los Angeles, Raleigh



NX55-9

THE CHEMICAL BASE FOR TOXAPHENE IS PRODUCED BY HERCULES FROM THE SOUTHERN PINE